



The Coalition's Policy

Key Commitments

Science, technology, engineering and mathematics (STEM) are increasingly important to the Australian economy and to future jobs.

Our children will have more and better opportunities if they learn and pursue STEM-related subjects at school and through vocational learning and higher education.

But despite substantial increases in education spending, the performance and outcomes of students, particularly in STEM, is declining.

Government expenditure on education increased by nearly 40 per cent over the decade to 2012-13, yet the performance of Australian students went backward in mathematics, science and reading.

Between 2008 and 2014, there was no improvement in numeracy across all year levels. Years 7 and 9 reading also showed no improvement and there were no changes in the proportion of students reaching or exceeding minimum standards at these year levels. International testing also shows that from 2000 to 2012 the performance of Australian students compared to their international counterparts has fallen significantly in maths, science and reading. Our children and Australia will be worse off if we do not improve the performance and outcomes of students, particularly in STEM-related subjects.

That is why the Coalition is investing in measures to elevate and improve STEM teaching and student STEM outcomes.

The Coalition will continue to grow our investment in all schools across Australia from its current record levels to a total of \$73.6 billion over the next four years. That is \$16 billion this year, up to \$20 billion in 2020.

We will also invest \$4.6 million to provide funding for 12 additional Pathways in Technology Early College High School (P-TECH) style pilot sites across Australia.

P-TECHs deliver potentially improved STEM-related results and employment outcomes for students by teaching technical and vocational education, creating tangible partnerships between schools and industry, providing students with the choice to pursue further STEM study or undertake STEM-related skills training with partner industry groups, and focussing learning on subjects that promote further STEM-related study.

We are already piloting P-TECH-styled programmes in schools in Geelong and Ballarat, adapted to the Australian school system and the employment needs of these local communities. Our commitment will expand the P-TECH pilot and will deliver more STEM-related pathways for students.

Our Plan to Expand Science, Technology, Engineering and Maths Through P-TECH Style Pilot Schools

The competitiveness of the Australian economy, and future jobs, will depend increasingly on the STEM capabilities of our workforce.

We are already taking action to improve STEM education.

Our national plan for innovation, for example, is delivering:

- disadvantaged areas with specialist ICT teachers
- flexible partnerships between STEM professionals and schools to give students a real-world understanding of STEM
- grants to support digital literacy across the Australian curriculum
- computing challenges for students in Years 5 and 7
- national coding competitions for students from Years 4 to 12
- ICT summer schools for disadvantaged students
- funding for the Little Scientists and The Smith Family's Let's Count programmes, to develop a new science app, and to support teaching of numeracy and science in the earliest years of education
- more than \$13 million to encourage more women to embark on STEM-related careers

The Coalition will continue to grow our investment in all schools across Australia from its current record levels to a total of \$73.6 billion over the next four years. That is \$16 billion this year, up to \$20 billion in 2020.

Our funding will be directed according to need, and will be tied to evidence-based initiatives to support student achievement, including requiring a minimum standard of literacy and numeracy from all students to complete Year 12 and requiring successful completion of an English or humanities subject and a maths or science subject as a prerequisite for an Australian Tertiary Admission Rank (ATAR).

We need to ensure our nation has strong STEM capabilities.

As the Office of the Chief Scientist makes clear:

“A strong economy in the twenty-first century prospers through science, technology, engineering and mathematics (STEM). Across the world, nations are competing for the high-growth firms and highly capable workers of the future; and securing the pipelines in their education systems today. They know that children entering the education

system in 2016 will be joining a very different workforce in 2030. They see the rising premium on skills in STEM. In these nations, STEM education counts.”¹

But despite substantial increases in education spending, the performance and outcomes of students, particularly in STEM, is declining.

Government expenditure on education increased by nearly 40 per cent over the decade to 2012-13, yet the performance of Australian students went backward in mathematics, science and reading.

Between 2008 and 2014, there was no improvement in numeracy across all year levels. Years 7 and 9 reading also showed no improvement, and there were no changes in the proportion of students reaching or exceeding minimum standards at these year levels.

Also, as measured by the Programme for International Assessment of Students (PISA) Australian students are falling behind their international counterparts. From 2000 to 2012, Australia fell to 19th in mathematics (we were 5th), 16th in science (we were 7th), and 14th in reading (we were 4th).

As the Australian Education Council notes, in a statement endorsed by Australia’s State, Territory and Federal Education Ministers:

“...the performance of Australian students against international benchmarks has stalled or declined as has participation in senior secondary science and advanced maths...

... [But] international research shows that building STEM capacity across the population is critical in helping to support innovation and productivity regardless of occupation or industry. Consistent with this research, industry surveys show that STEM literacy is increasingly becoming part of the core capabilities that Australian employers need...

... A renewed national focus on STEM in school education is critical to ensuring that all young Australians are equipped with the necessary STEM skills and knowledge that they will need to succeed.”²

The Coalition will do more to elevate and improve STEM teaching and student STEM outcomes.

¹ Office of the Chief Scientist (2015) *Transforming STEM teaching in Australian Primary Schools: Everybody’s Business*, p.1.

² Education Council (2015) *National STEM School Education Strategy: A Comprehensive Plan for Science, Technology, Engineering and Mathematics Education in Australia*, pp. 3 and 4.

We will invest \$4.6 million to provide funding for 12 additional P-TECH style pilot sites across Australia.

P-TECH schools provide potentially improved STEM-related results and employment outcomes for students by:

- teaching technical and vocational education
- creating tangible partnerships between schools and industry, helping to ensure students acquire knowledge, skills and abilities sought by employers
- delivering industry supported pathways for students to achieve recognised and sought after qualifications
- focussing learning on subjects that promote further study for STEM-related diplomas, advanced diplomas and associate degrees
- providing students with the choice to pursue further STEM study or undertake STEM-related skills training with partner industry groups
- delivering practical mentoring and teaching to students

These are real and significant measures to boost the uptake and quality of STEM learning.

The Coalition is already piloting P-TECH style programmes in schools in Geelong and Ballarat, adapted to the Australian school system and the employment needs of these local communities.

Under the pilot, the Coalition is providing funding to the Skilling Australia Foundation to link local schools with significant, STEM-focussed businesses in the local communities. Our funding supports a number of resources to help make the P-TECH successful, including a locally-based industry liaison officer, course design and training for industry mentors.

Around 80 Year 9 students at Newcomb Secondary College (Geelong) and 50 Year 10 students at Federation College (Ballarat) are studying regular Australian curriculum secondary school subjects such as English, science or maths, alongside an advanced STEM learning programme that aligns with local employer needs.

In addition to their Senior Secondary Certificate (in Geelong) or Victorian Certificate of Applied Learning (in Ballarat), these students have a pathway to a STEM-related diploma, advanced diploma or associate degree.

Site visits, industry mentors and employer projects are helping students to build connections between what they are learning in their classrooms and the real jobs to which they aspire.

Geelong students are working with a consortium of five local companies – Barwon Health, GMHBA, Tribal Campus, Bendigo Bank, Opteon Property Group – whilst IBM has taken the lead in Ballarat.

The Coalition will provide \$4.6 million for 12 additional P-TECH styled pilot sites in local communities around Australia.

The Choice

The Coalition is focused on delivering a stronger economy with more jobs, higher real wages, more opportunities, and a greater standard of living for our children.

We are delivering.

Over 440,000 new jobs have been created since we came to Government.

The Coalition is investing in Australian schools and learning.

We will deliver a record \$73.6 billion over the next four years for Australian schools.

That is \$16 billion for schools in 2016, growing to more than \$20 billion in 2020.

School funding will grow every year from current record levels of investment.

Our commitment is needs-based, to ensure funding is targeted to where it is most needed. Future funding will be tied to evidence-based initiatives proven to support student achievement.

The Coalition is the only party with a fully funded and affordable plan that ensures money is needs-based and focuses on proven measures that will improve outcomes in literacy, numeracy and STEM subjects.

We have also delivered significant commitments to strengthen and grow Australia's skills.

The Australian Apprenticeship Support Network makes it easier for employers to recruit, train and retain apprentices. The network has delivered services at around 400 locations nationwide, and has so far helped more than 270,500 employers, apprentices and prospective employers since it began on 1 July 2015.

Trade Support Loans provide eligible apprenticeships with up to \$20,000 to help with the cost of living during an apprenticeship – so far, over 40,000 young tradies have taken up these loans.

The Coalition is delivering foundation skills, such as literacy and numeracy training, to help more than 80,000 people each year develop work ready skills and assist migrants to settle in Australia and move into further training and employment.

The Coalition made more than a dozen important reforms to further safeguard the VET FEE-HELP student loan programme. From 1 July 2015 and 1 January 2016, VET marketing, recruitment and administration rules were tightened to provide better protection for students.

Labor cut more than a billion dollars from apprenticeships between 2011-12 Budget and the 2013 Federal Election.

Costs

The Coalition will invest \$4.6 million to expand STEM through P-TECH style pilot schools.



THE NATIONALS
for Regional Australia

For further details of the Coalition's plan go to
www.liberal.org.au/our-plan
nationals.org.au/our-plan/