

A strategy for STEM in Queensland state schools

Schools of the future



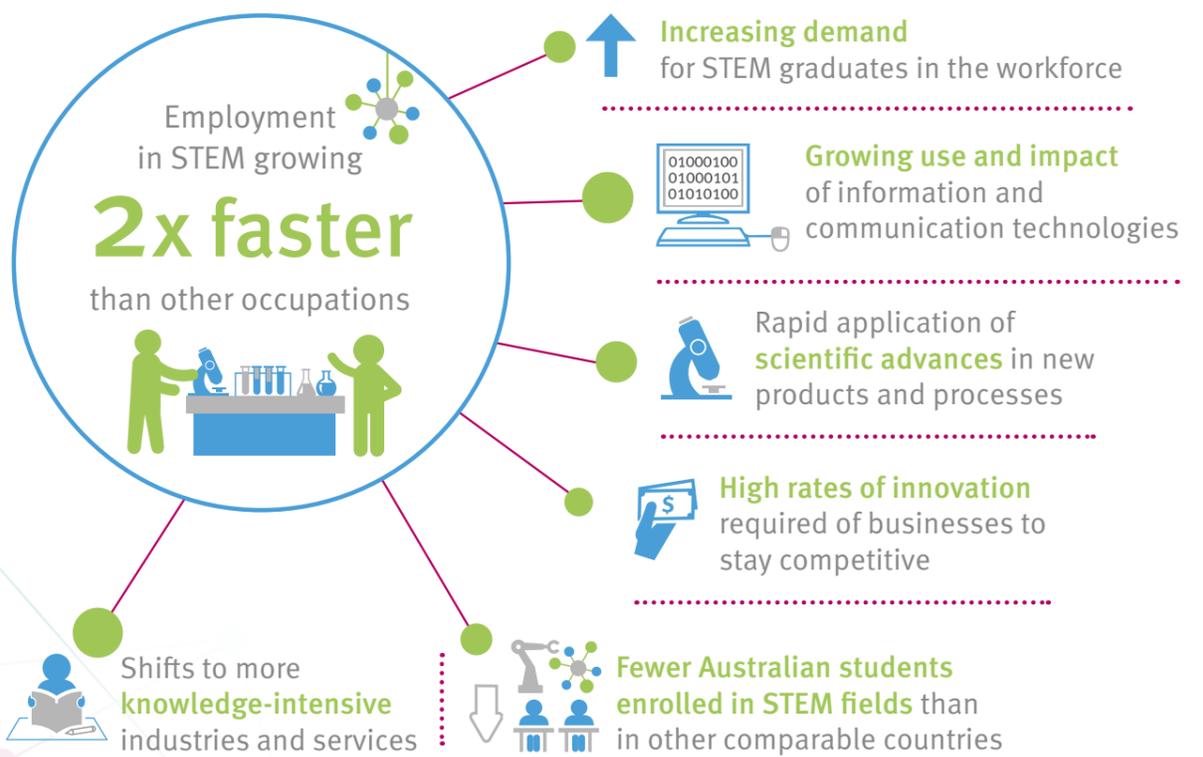
Engaging STEM Girl Power Camp students in the World Science Festival Brisbane

Science, technology, engineering and mathematics (STEM) touch every aspect of today's world, and the innovations that emerge from these fields underpin the global economy.

Our challenge is to ensure we prepare every young Queenslander to take advantage of the many opportunities a knowledge-based economy offers and become the entrepreneurs of tomorrow.

We must harness the passion for change and innovation by engaging students in STEM and providing them with the opportunities they need to develop as problem solvers, critical and creative thinkers.

Our teachers are critical to the success of our plan for STEM. Supporting teachers to innovate and engage with cutting edge science and teaching practice will transform the teaching of STEM in every state school.



Our plan for STEM in Queensland state schools will:

- lift participation of students including girls and Aboriginal and Torres Strait Islander students
- give every state school access to a specialist STEM teacher
- ensure every state school offers the Digital Technologies curriculum, including coding and robotics.

Advancing education

Schools of the future



Building teacher capability to transform STEM learning

- creating opportunities for professional learning for teachers in STEM through the STEM Hub, Queensland Coding Academy and practical resources to support classroom practice
- mentoring and coaching for teachers by regionally-based STEM champions
- giving every state school access to a specialist STEM teacher
- offering targeted Step into STEM Teaching Scholarships for high-achieving preservice STEM educators
- partnering with the Queensland University of Technology (QUT) to develop a framework for regional school clusters to build teacher capability and relationships with industry and universities
- extending high quality STEM teaching through STEM in Action grants and the Peter Doherty Awards for Excellence in STEM Education

More students engaged in STEM learning

- engaging schools in the Entrepreneurs of Tomorrow program providing opportunities for students to work with industry experts and develop their business plans
- challenging students to solve real world coding problems through the Premier's Creating Queensland's Future coding competition
- encouraging girls to engage in STEM initiatives such as the STEM Girl Power Camp and mentoring by STEM champions
- partnering with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to deliver STEM programs to Aboriginal and Torres Strait Islander students in state schools
- connecting students across Queensland to cutting edge STEM resources and innovation through the STEM Hub and the Queensland Coding Academy

Achieving excellence in STEM learning

- promoting targeted initiatives to lift student performance in STEM, including scientific and mathematical literacy and opportunities for Indigenous students
- implementing the Australian Curriculum: Digital Technologies in state schools
- providing STEM-specific curriculum resources, through the *Curriculum in the Classroom* project, to develop students' skills in literacy, critical and creative thinking, and problem solving
- engaging and challenging the best and brightest students from Years 5 to 9 through the STEM virtual academies

Working Together

Through partnerships with industry, universities and the community:

- schools will provide world-class STEM learning
- students will be ready for the jobs of the future.

Student engagement is also enhanced by programs that provide specialised training and support for both primary and secondary teachers. Professional development for teachers and educators is essential.

Dr Geoff Garrett AO
Office of the QLD Chief Scientist

75 per cent of the fastest growing occupations require STEM skills. Our focus on STEM will help to ensure that every Queensland student can succeed in our changing world.

Kate Jones MP
Minister for Education



For more information on coding and robotics, visit www.advancingeducation.qld.gov.au



¹ Craig, E. et al., 2011. *No Shortage of Talent: how the global market is producing the STEM skills needed for growth*, Accenture Institute for High Performance.

² OECD, 2011. *Over-Qualified or Over-Skilled: A review of existing literature*, OECD Social, Employment and Migration Working Papers, No 121.

³ Marginson, S. et al., 2013. *STEM Country Comparisons: International comparisons of science, technology, engineering and mathematics (STEM) education*, Australian Council of Learned Academies, Melbourne.

⁴ Office of the Chief Scientist 2014, *Science, technology, engineering and mathematics: Australia's future*, Australian Government, Canberra.