



Partner with schools to help upskill the next generation of workers in STEM

Partnerships between the Department for Education schools and industry – small business through to corporations, councils, non-profits and industry groups – are critical for our state's future. The next generation of South Australians to enter the workforce should be well prepared to meet the needs of industry and modern workplaces.

Children starting preschool today will face a world we can't imagine when they eventually graduate from high school. They'll work in jobs yet to be created, use technologies yet to be invented, and face social, economic and environmental challenges yet to be anticipated.

Help schools to shape our future South Australian graduates

South Australia's plans for innovative, knowledge-based industries means that we'll need highly skilled citizens, particularly in STEM fields.

More is being demanded of schools to prepare young people for this new world but there are limits to what schools can achieve alone.

As a state, we need to grow the number of young people choosing to study STEM subjects.

While 75% of the fastest growing occupations require STEM skills, the number of year 12 students studying STEM subjects is not keeping pace. Simply mandating STEM subjects will not work. A better solution is to make these subjects compelling, stimulating and exciting to inspire students.

How school-industry partnerships can help

Partnerships with industry connect the school curriculum to real-world applications. This helps students to see how science, technology, engineering and mathematics (STEM) is relevant to industry challenges that professionals tackle.

Real-world experiences extend students' skills in:

- collaboration – working with a group to achieve shared goals
- creativity – new ways of solving problems and developing new ideas

- critical thinking – making a decision or forming an opinion by exploring various ideas and sources of information – all competencies that are valued in the workplace.

These young people are tomorrow's job applicants.

Everyone benefits

Teachers and students benefit by learning from industry experts about STEM careers, technological developments and contemporary work practices.

A survey of South Australian businesses already partnering with schools found that the value proposition for business includes:

- supporting young people's growth and development
- contributing to a STEM-skilled graduate pipeline
- providing a personal and professional development opportunity for staff.

Connecting with creative and inspiring young people is an opportunity to enhance your organisation as well as to give back to the community.

Flexible win/win partnerships

School-industry partnerships can take on many forms. They may be short or long-term, a single visit to a classroom or a partnership over a few months.

An industry partner may be a global company or a local organisation. There may be multiple schools involved or multiple businesses.



There are many ways that industry can partner with schools, including:

- showing students what real-world business facilities look like
- providing examples of authentic problems that young people would be inspired to solve
- connecting with students as role models, and
- supporting teachers to build contemporary STEM knowledge and practices.

STEM school-industry partnerships – starting young

Building skills and aspiration for STEM learning starts in the early years. Young children are natural scientists as they make observations, test their ideas and share discoveries through a sense of wonder and play.

Partnerships between preschools and local organisations offer a wealth of authentic learning contexts for young children.

During the primary and secondary years, industry partnerships can bring STEM learning to life by connecting concepts taught in the classroom to everyday industry, social and environmental challenges.

Working on real-world problems motivates students of all ages.

A successful example is when an industry partner works with a classroom teacher to develop a genuine STEM challenge. Students are guided through a problem-solving process to develop a solution, which they present as ideas and findings to the class group and industry partner.

For more ideas, refer to the [Guide to STEM School-Industry Engagement](#) on the Department for Education website.

Girls in STEM

Although more women than ever before are entering STEM careers, they are still underrepresented at 29% of the workforce.

Research shows that girls perform just as well as boys in STEM subjects if they are interested, engaged and motivated. In year 12, however, boys outnumber girls 4 to 1 in physics and almost 2 to 1 in advanced mathematics.

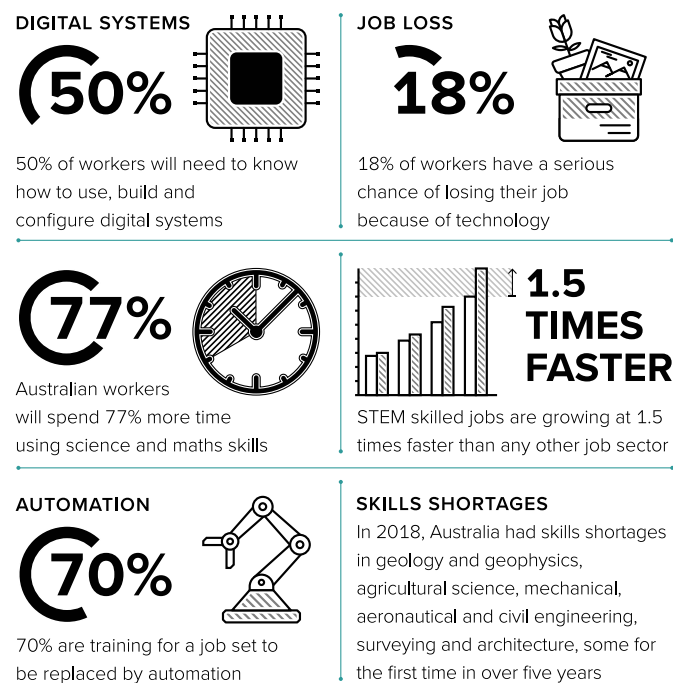


While digital technology is sweeping every aspect of our lives, boys outnumber girls more than 10 to 1 in year 12 Digital Technologies.

Authentic industry engagement connects girls with relatable female role-models and to the broad range of STEM career opportunities.

There are many inspiring female scientists, technicians and tradespeople, engineers and mathematicians working in all sorts of sectors, solving problems and designing products that are improving our lives.

WORKFORCE NEEDS OF THE FUTURE



Adapted from Australian Academy of Science 2019, p.11

You can help achieve the goal of a qualified, industry-ready workforce for the next 50+ years

Our collective futures will continue to be shaped by the quality and effectiveness of our education system. Make your influence count for a productive, well qualified South Australia now and into the future.

For further information please visit the Department for Education website – www.education.sa.gov.au/stemindustry

Sources:

- Office of the Chief Scientist (2020) *Australia's STEM Workforce*, Australian Government, Canberra
- Australian Academy of Science (2019) *Women in STEM Decadal Plan*, Australian Academy of Science
- Education Services Australia (2018) *Optimising STEM Industry-School Partnerships: Inspiring Australia's Next Generation Final Report*, STEM Partnerships Forum