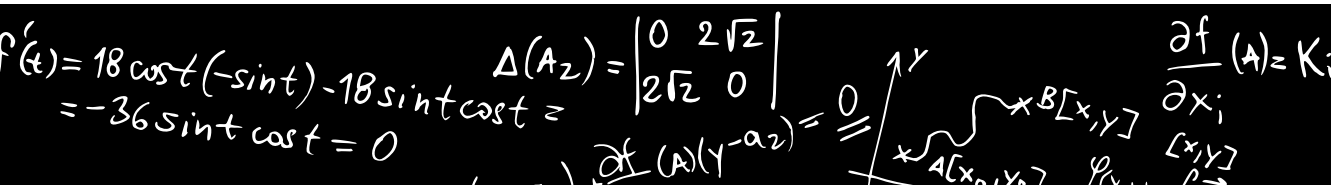
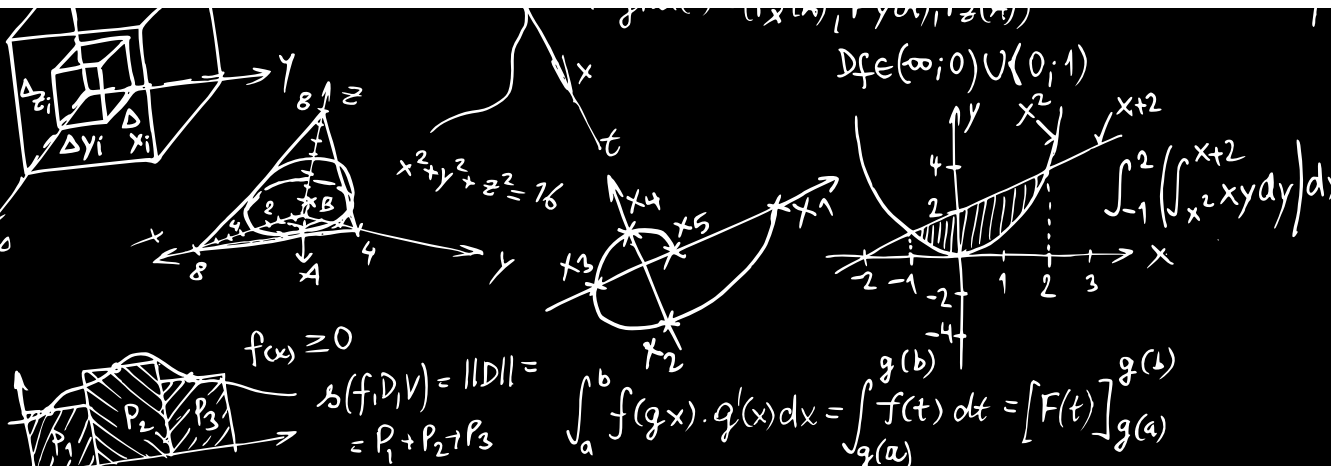
Australian Government
Office of the Chief Scientist

SPI 2016

STEM PROGRAMME INDEX 2016





AiGROUP

Australian Government
Office of the Chief Scientist

AiGROUP

SPI 2016

STEM PROGRAMME INDEX 2016

Preparation of this guide

The list of programmes was compiled by the AiGroup with funding provided by the Office of the Chief Scientist. This guide reflects publicly available information and consultations conducted up to January 2016.

START YOUR ADVENTURES IN STEM

SPI 2016 is an introduction to the many organisations who want to help schools and parents make a future for our children in STEM.

In this booklet you'll find over 250 active programmes, catering to hundreds of schools and many thousands of students across the country. Some are provided by businesses, some by universities, science and education agencies, and some by government.

This list reflects publicly available information provided by the programme sponsors as at January 2016. We've searched widely, but we know there are more great programmes out there – and there'll be more to come in the critical years ahead.

Find your fit

Programmes are divided into ten colour-coded chapters by **subject** – representing Science (five chapters), Technology, Engineering and Mathematics. Also included are chapters on:

- Integrated and Multidisciplinary STEM: programmes building students' capacity to think and solve problems across subject borders

- Entrepreneurship: programmes building business skills; accessible and relevant but not necessarily targeted to STEM students

Chapters are then divided by:

- **Grade level** (*Primary/Primary and Secondary/Secondary*)
- **Reach** (*International/National/ State*)
- **Programme type**

Each entry contains all the information you need to make contact with the provider, investigate the programme and decide if it's right for you, your child or your school. There are after-school clubs and holiday programmes, competitions, excursions, in-school programmes, mentors, resources, university enrichment and more to be discovered.

Australian private companies – what are they supporting?

Want to see what Australian companies are doing to help boost STEM education? See page 129 for a full list of companies and what they are funding represented in SPI 2016.

Want to find out more?

Great STEM teaching matters – You can find the Office of the Chief Scientist's proposal to change Australia by supporting great teachers here: www.chiefscientist.gov.au/wp-content/uploads/Transforming-STEM-teaching_FINAL.pdf

The Australian Industry Group is working with the Chief Scientist to identify and expand the business-school collaborations that get the best results. Contact Maggie Farrell on 08 8394 0004 for more information about the *STEM Skills Partnerships* programme.

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FOREWORD

It takes fourteen years, or thereabouts, for young people to progress from pre-school to Year 12 in Australia. What happens to them in that time ought to concern us all.

We don't want them to leave confident they know all there is to know. On the contrary, they ought to know that there is much they don't know, because the knowledge is yet to be discovered, and they will have to seek it out for themselves.

We do want them to leave with the passion to be a seeker, the skills to do it effectively, and the imagination to make a wonderful life and career. And so we want them to be provided with a thorough grounding in the disciplines we group together as STEM: science, technology, engineering and mathematics. It is the only way to build a competitive modern economy, and the best way to spread its opportunities throughout the community.

There is a powerful incentive here for Australian businesses, universities, state governments and science agencies, and many of them are rising to it. This document is a guide to the increasing number of programmes seeking to connect school students to the resources that these sectors can offer.

The initiatives in this booklet are putting STEM mentors into classrooms inspiring curiosity, harnessing digital technologies and bringing new ideas into education. At their best, they back the most important resource of all – our teachers – with the tools to make our students excited to learn.

We encourage schools, teachers, parents, students and employers to look to the opportunities these programmes might provide; and we hope their example will persuade many more organisations and STEM professionals to get involved. We all have a stake in great education.

Professor Ian Chubb AC
Australia's Chief Scientist

Innes Willox
Chief Executive, Australian Industry Group

PRIMARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

Little Scientists

FROEBEL Australia Ltd

Little Scientists' is a not-for-profit initiative of FROEBEL Australia Limited and in cooperation with the German "Little Scientists' House" Foundation. It has been designed to facilitate children's curiosity for science, technology, engineering and mathematics through age-appropriate, fun and playful experiments already in their early years. Every education and care service in Australia that works with children from 3 to 6 years of age can join the programme and can become an accredited "Little Scientists' House".

The programme sparks teachers' and educators' interest in STEM and encourages them to implement the ideas and concepts from the workshops while exploring together with the children in their care.

Type: In-school programme

Location: National

Age groups: Pre-school and primary students aged 3-6.

Contact: Sibylle Seidler, Project Manager, sibylle@littlescientists.org.au

Website: www.littlescientists.org.au/

RESOURCES

Primary Connections: Linking Science with Literacy

Australian Academy of Science

Linking science with literacy is an innovative approach to teaching and learning which aims to enhance primary school teachers' confidence and competence for teaching science.

Primary Connections key features:
- An inquiry and investigative approach
- A comprehensive professional learning programme
- Award winning curriculum resources linking science with literacy
- An ongoing research and evaluation programme

Thirty one curriculum units have been developed and made freely available to Australian teachers online. In addition funding has supported professional learning resources and workshops.

The programme aims to link science with literacy in an innovative, inquiry-based approach for the teaching and learning of science and the literacies of science in the primary years of schooling.

Type: Resource

Location: National

Target audience: Primary school

Sponsors/Partners: Australian Government-Department of Education

Contact: pc@science.org.au

Website: https://primaryconnections.org.au/

PRIMARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

Living a Life Less Plastic

Sydney Institute of Marine Science (SIMS)

In Living a Life Less Plastic, students will investigate environmental issues relating to plastic use and disposal in a four week programme.

The programme aims to develop independent thinking, scientific investigation and creative problem solving.

Type: In-school programme
Location: New South Wales
Age groups: Primary school students
Dates: Ongoing, 4-week course
Contact: info@sims.org.au
Website: http://sims.org.au/education/

PRIMARY AND SECONDARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Sleek Geeks Science Eureka Prize

Australian Museum

The University of Sydney Sleek Geeks Science Eureka Prize is offered to primary and high school students. It encourages students with a passion for science and for communicating ideas to tell a scientific story using a short video. Entries are to take the form of a 1-3 minute film and must tell a real scientific story, which may be a scientific concept, discovery, invention, or the producer's own scientific hypothesis. The idea is to communicate a scientific concept(s) in a way that is accessible and entertaining to the public while painlessly increasing their science knowledge together with the children in their care.

The programme aims to offer challenging and exciting science-based activities to school students and to support budding young scientists.

Type: Competition
Location: National
Age groups: Primary and secondary school students
Dates: Annual, entries open in February
Sponsors/Partners: University of Sydney
Contact: 61 2 9320 6483, eureka@austmus.gov.au
Website: http://sydney.edu.au/science/outreach/primary-school/eureka/index.shtml

IN-SCHOOL PROGRAMMES

CSIRO Indigenous STEM education programme: Science Pathways for Indigenous Communities

CSIRO Education

Science Pathways for Indigenous Communities targets primary and middle school students in remote Aboriginal communities and uses on-country projects as the context for learning science linked to Indigenous ecological knowledge.

Type: In-school programme
Location: National
Age groups: Primary and middle school Indigenous students
Sponsors/Partners: BHP Billiton
Contact: CSIRO Education and Outreach, education@csiro.au
Website: www.csiro.au/en/Education/Programs/Indigenous-STEMACT/Black-Mountain-discovery

Science Program Exciting Children Through Research Activities

Australian Science Teachers Association (ASTA)

The Science Program Exciting Children Through Research Activities (SPECTRA) is a national science award programme developed and administered by ASTA for students between Years 1 and 10.

There are two levels in the program: SPECTRA and Junior SPECTRA. Each level has a range of science topic cards where students complete activities related to their chosen topic. The students carry out a range of practical and observational activities, research, experiments and projects. When the required number of activities has been completed to the satisfaction of the teacher/parent, the student is awarded a certificate and badge.

The programme aims to get students excited about and interested in science activities.

Type: In-school programme
Location: National
Age groups: Year 1-10 students
Dates: Ongoing
Contact: 02 6282 9377, asta@asta.edu.au
Website: http://asta.edu.au/resources/spectra

Shell Questacon Science Circus

Questacon

Science graduates bring lively presentations of science to towns and schools across regional Australia while studying for a Master of Science Communication Outreach.

Visits are about four things:
• in-school show performances
• teacher professional development workshops
• a travelling science centre for the community
• beyond school events for senior secondary students

The programme aims to inspire young people to value and engage in science, technology, engineering and maths.

Type: In-school programme
Location: National
Target audience: Students, teachers and the general public
Dates: Dates vary by state
Sponsors/Partners: Shell, ANU
Contact: ScienceCircus@questacon.edu.au
Website: www.questacon.edu.au/outreach/programs/science-circus

RESOURCES

Food Production Education Resources

Australian Pork Ltd

Australian Pork Limited has developed three Food Production Education Resources aligned to the new Australian curriculum in technologies, science and geography.

The units contain activities aiming to educate students and the wider school community on the following:

• Systems of care used by farmers for pigs that are grown, raised and processed for food and how farmers manage these systems;

• Sustainable resource management practices in food and fibre production; and

• Food production (pork) in managed systems and how these systems are becoming more sustainable.

The Education Resources use inquiry-based, 21st Century learning methodologies and involve hands-on practical and web based activities, group work and critical thinking.

The programme aims to educate students and the wider community on food production and management systems.

Type: Resource
Location: National
Age groups: Primary and secondary students
Contact: apl@australianpork.com.au
Website: www.australianpork.com.au

Science ASSIST

Australian Science Teachers Association

Science ASSIST (Australian School Science Information Support for Teachers and Technicians) is a national online advisory service for school science educators and technicians. It is freely available to all Australian schools from all education jurisdictions and sectors in every state and territory.

Science ASSIST is managed by the Australian Science Teachers Association (ASTA) in consultation with Science Education Technicians Australia (SETA).

Type: Resource
Location: National
Target audience: Primary and secondary teachers and technicians
Dates: Ongoing
Sponsors/Partners: Australian Government Department of Education
Contact: Delese Brewster, 02 6282 9377 delese@asta.edu.au
Website: http://asta.edu.au/programs/assist

Teacher Earth Science Education Programme (TESEP)

Australian Science Teachers Association

TESEP includes professional development workshops, resources, case studies and access to teachers experienced in the field.

TESEP operates under the auspices of the Australian Science Teachers Association with guidance from an advisory board.

The programme aims to help science teachers improve their student outcomes and make better use of their time teaching earth and environmental science.

Type: Resource
Location: National
Target audience: Science teachers
Dates: Ongoing
Contact: eo@tesep.org.au
Website: www.tesep.org.au

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

COMPETITIONS

Oliphant Science Awards

South Australian Science Teachers Association (SASTA)

The Oliphant Science Awards is an annually held competition for South Australian school students from Reception to Year 12 to develop their interest in science through a science based competition with a range of categories to suit a wide variety of abilities and interests. The awards provide students with an opportunity to expand their scientific literacy, by showing interest and understanding in the world around them and engaging in discussions about science.

Type: Competition
Location: South Australia
Age groups: Primary and secondary students
Dates: Annual. Registrations close June 23
Sponsors/Partners: South Australian Department for Education and Early Child Development, The Advertiser, Australian Government Defence Science and Technology Organisation, University of South Australia with Hewlett Packard, BHP Billiton, Beach Energy, CSIRO, Australian Institute of Energy, Catholic Education South Australia, Nature Foundation SA
Contact: office@sasta.asn.au, 08 8354 0006
Website: www.oliphantscienceawards.com.au/

Queensland Science Contest

Science Teachers' Association of Queensland

The Queensland Science Contest is an opportunity for Queensland students from Prep to Year 12 to have their scientific work judged for awards and prizes.

The contest aims to stimulate an ongoing interest in the study of science; to promote the direct involvement of Queensland students in the processes and communication of science; and to celebrate in the wider community the exemplary science being carried out by Queensland students.

Type: Competition
Location: Queensland
Age groups: Prep - Year 12 students
Dates: Annual
Sponsors/Partners: University of Queensland, Energex, ASBMB, RACI, AAS, ASSSI
Contact: staq@staq.qld.edu.au
Website: www.staq.qld.edu.au/queensland-science-contest/

Science Talent Search

Science Teachers' Association of Western Australia

The Science Talent Search is an annually held competition for Western Australian school students from Kindergarten to Year 12. This competition recognises the excellent work of students with prizes in each age group and category, along with young scientist and school awards for outstanding achievements.

The competition aims to promote science teaching and learning through creative project work.

Type: Competition
Location: Western Australia
Age groups: Year K-12 students
Dates: Annual
Contact: info@stawa.net, 08 9244 1987
Website: http://stawa.net/

Science Teachers' Association of Victoria competitions

Science Teachers' Association of Victoria

The Science Teachers' Association of Victoria conducts various student science activities across the state, including the Science Talent Search and Science Drama Awards.

The Science Talent Search (STS) is an annual, science based competition with a theme in 2016 of Drones, Droids and Robots. The Science Drama Awards help to foster creativity and integrate the study of science with reading, writing, music, art and the performing arts. Both competitions are open to all primary and secondary students in Victoria.

Type: Competition
Location: Victoria
Age groups: Prep - Year 12 students
Dates: Annual
Sponsors/Partners: Various sponsors
Contact: stav@stav.vic.edu.au, 03 9385 3999
Website: www.stav.org.au/index.html

ScienceiQ

Science Teachers' Association of Western Australia

ScienceiQ is a series of online science competitions that test student knowledge, skills and understandings in most areas of science, such as astronomy, biology, chemistry, physics, biotechnology and science investigations.

ScienceiQ competitions run each term of the school year for specific year groups. Teams can log on at any time during the set days and have up to one hour to complete each round.

Type: Competition
Location: Western Australia, online
Age groups: Year 5-10 students
Dates: Ongoing
Contact: info@stawa.net, 08 9244 1987
Website: www.scienceiq.net/

SEA*ACT Science Fair

Science Educators Association of the Australian Capital Territory

Participation in the SEA*ACT Science Fair provides opportunities for students to demonstrate their understanding of science inquiry processes as outlined in the Science Inquiry Skills strand of the new Australian Curriculum - Science. There are four categories for entries, which must be entered under one of five themes.

The programme aims to encourage students to take an active involvement and interest in science, and to pursue their interests in science beyond the boundaries of the classroom.

It also aims to enable the community, including other students and teachers, to see project work done by students in ACT colleges, schools and preschools.

Type: Competition
Location: Australian Capital Territory
Age groups: Early childhood to Year 12 students
Dates: Annual
Sponsors/Partners: BHP Billiton, CSIRO, Australian National University
Contact: seaact@y7mail.com, 02 6288 1904
Website: http://seaact.act.edu.au/events/seaact_science_fair

Tasmanian Science Talent Search (TSTS)

Science Teacher's Association of Tasmanian (STAT)

The Tasmanian Science Talent Search promotes quality science education in government and non-government schools through the recognition of outstanding work in a variety of fields.

Type: Competition
Location: Tasmania
Age groups: Early childhood - Year 12 students
Dates: Annual
Website: http://stat.org.au/tsts/

Young Scientist Awards

Science Teachers' Association of New South Wales (STANSW)

Young Scientist offers students from Kindergarten to Year 12 worthwhile incentives to carry out scientific investigations. It provides teachers with valuable resources and professional learning opportunities.

Students in NSW schools carry out scientific investigations as part of their school's science program. The Young Scientist categories and judging rubrics are designed to support the investigation elements of these syllabuses.

Type: Competition
Location: New South Wales
Age groups: Primary and secondary students
Dates: Annual
Contact: PO Box 458, Strathfield 2135 office@stansw.asn.au, 02 97632751
Website: www.youngscientist.com.au/

EXCURSIONS

Macquarie University Science Partnership

Macquarie University Faculty of Science and Engineering, Department of Engineering

The Macquarie University Science Partnership is collaboration between Macquarie University and the NSW Department of Education and Training through the Peninsula Community of Schools.

The partnership supports and implements innovative teaching and learning practices to over 8000 students from K-12.

The programme aims to provide students with opportunities to engage and excel in STEM.

Type: Excursion
Location: New South Wales
Age groups: Primary and secondary students
Dates: Ongoing
Sponsors/Partners: National Australia Bank Schools First
Contact: jann.pattinson@mq.edu.au
Website: www.mq.edu.au/community.old/about/programs/sciencepartnership

National Science and Technology Centre

Questacon

Questacon strives to promote greater understanding and awareness of science and technology within the community.

Questacon is committed to making that experience fun, interactive, and relevant.

Type: Excursion
Location: Australian Capital Territory
Age groups: Primary and secondary students
Dates: Ongoing
Sponsors/Partners: Ian Potter Foundation, Shell, Samsung, Raytheon, Miraikan, Polycom, BOC
Contact: info@questacon.edu.au
Website: www.questacon.edu.au/

The CSIRO Discovery Centre

CSIRO

The CSIRO Discovery Centre offers an interactive journey through CSIRO and Australian science history. The exhibition is self-guided and allows visitors to immerse themselves in stories of Australian research and its value to society.

The centre aims to present science in an entertaining way, to demystify it, and to educate kids and adults of all ages about the fascinating world of research and innovation.

Type: Excursion
Location: Australian Capital Territory
Age groups: Primary and secondary students and the general public
Dates: Ongoing
Contact: info.discovery@csiro.au
Website: www.csiro.au/Portals/Education/Programs/Discovery-Centre.aspx

IN-SCHOOL PROGRAMMES

Museum Express

Newcastle Museum

Museum Express delivers high quality and engaging science shows to primary schools in the Hunter and Central Coast regions. The shows are presented by expert Newcastle Museum staff and linked to the NSW and Australian Curriculum. There are four fun and educational shows available.

Type: In-school programme
Location: Hunter and Central Coast, New South Wales
Age groups: Primary and secondary students
Dates: Ongoing
Sponsors/Partners: Orica
Contact: groupbooking@ncc.nsw.gov.au
Website: www.newcastlemuseum.com.au/learning/museum-express

Q2U

Questacon

Questacon visits schools in the ACT and surrounding region.

There's no excursion form or bus hire to worry about when the theatre troupe, The Excited Particles, visits schools to present an hour of science and fun.

The Q2U programme will engage and inspire students by providing fascinating science shows with exciting demonstrations and experiments—all without leaving school grounds.

All shows are linked with the Australian Curriculum - Science.

Type: In-school programme
Location: Australian Capital Territory and New South Wales
Age groups: Primary and secondary students
Contact: q2u@questacon.edu.au
Website: www.questacon.edu.au/outreach/programs/q2u

MENTORING, SCHOOL VISITS AND CAREERS

Science Experiences

Griffith University

The programme aims to bring dynamic and engaging science demonstrations and teaching resources to your classroom, providing primary and secondary school staff and students access to innovative facilities, resources and expertise.

The programme offers a diverse array of science activities to choose from. In addition to delivery of specialised technical demonstrations and practical laboratory classes, we also offer fun field trips, exciting events and great science shows as well as professional development and teaching resources.

The programme promotes student participation and involvement in science in a fun and entertaining way.

Type: Mentoring, school visits and careers
Location: Queensland
Age groups: Primary and secondary students
Dates: Ongoing, bookings required
Website: https://scienceonthego.griffith.edu.au/experiences/

Tall Poppies Reaching Students Program

Australian Institute of Policy and Science

The annual Young Tall Poppy Science Awards aim to recognise the achievements of Australia's outstanding young scientific researchers and communicators.

The Tall Poppies Reaching Students Program engages the Young Tall Poppy Science Award winners in activities to promote interest, study and careers in science among school students, teachers and the broader community.

Activities include presentations and class activities by Tall Poppies at secondary and primary schools, video-conferences between Tall Poppies and high schools, science-themed seminars for students, workshops for teachers, and ongoing activities with interested schools.

Type: Mentoring, school visits and careers
Location: Australian Captial Terriroty, New South Wales, South Australia, Queensland, Victoria, Western Australia
Age groups: Primary and secondary students
Dates: Annual
Sponsors/Partners: Various
Contact: Camille Thompson, Campaign Manager,
02 9351 0818, info@aips.net.au
Website: www.aips.net.au/tall-poppies/tall-poppy-campaign/tall-poppies-reaching-students-program/

Young Tassie Scientists

University of Tasmania

Young Tassie Scientists (YTS) involves early career researchers and scientists who are passionate about their work and can connect with a range of audiences. They present talks and activities based on their work to schools and communities around Tasmania, and are widely profiled ambassadors for science, engineering and technology during National Science Week.

The YTS help engage and motivate students about science and science careers – and also provide teachers with the opportunity to strengthen their knowledge of current research.

The programme aims to broaden the profile of science and engineering to students and the general public throughout Tasmania and to provide insights into working as a scientist or engineer.

Type: Mentoring, school visits and careers
Location: Tasmania
Age groups: Primary and secondary students
Dates: Annual, August
Sponsors/Partners: Australian Government Department of Industry, Innovation and Science; Tasmanian Government Department of State Growth
Contact: University of Tasmania, Hobart Faculty of Science, Engineering & Technology, 02 6226 2125, science.enquiries@utas.edu.au
Website: www.youngtassiescientists.com

RESOURCES

ASTA Resources

Australian Science Teachers Association (ASTA)

ASTA produces and distributes a range of resources to assist, inspire and educate science teachers. A full list is available at the ASTA website.

Type: Resources
Location: National, online
Target audience: Primary and secondary science teachers
Dates: Ongoing
Contact: asta@asta.edu.au, 02 6282 9377
Website: http://asta.edu.au/resources

Cotton Classroom

Cotton Australia

Extensive suite of teachers' resources and kits and lessons, including clearly articulated links to science, chemistry, geography, agricultural science curriculum in NSW and QLD. Videos and presentations fot K-12.

The content has been developed by Cotton Australia, the Australian cotton industry's peak grower body. Each chapter is linked to the Key Learning Outcomes in the QLD and NSW Senior Secondary Syllabuses.

The resource aims to provide ideas for where cotton contexts may be incorporated into teaching programs in line with syllabus requirements.

Type: Resources
Location: Queensland and New South Wales
Age groups: Primary and secondary students
Dates: Ongoing
Contact: talktous@cottonaustralia.com.au
Website: http://cottonaustralia.com.au/cotton-classroom

STANSW Resources

Science Teachers' Association of New South Wales

STANSW produces and distributes a range of resources to assist, inspire and educate science teachers. Conferences and online courses are also offered. A full list of resources is available at the STANSW website.

Type: Resources
Location: New South Wales, online
Target audience: Primary and secondary science teachers
Dates: Ongoing
Contact: office@stansw.asn.au, 02 9763 2751
Website: www.stansw.asn.au/default.aspx

UNIVERSITY ENRICHMENT

PrimeSCI!

Monash University

PrimeSCI! is a group at Monash University which interfaces imaginative research-active scientists with students, their teachers, their friends and the general public.

PrimeSCI! programmes take people into labs, the field, onto the net, and into classrooms and lecture halls to explore how science works and what it can offer.

PrimeSCI! connects science and technology with the arts, politics, economics, law – and many other disciplines.

Type: University enrichment
Location: Victoria
Age groups: Primary and secondary students
Dates: Ongoing
Contact: Room 41, 9 Rainforest Walk
School of Earth Atmosphere and Environment
Monash University, Clayton Campus
VICTORIA 3800
03 9905 1370. primesci@monash.edu
Website: www.monash.edu/science/schools/earth-atmosphere-environment/primesci

SECONDARY SCHOOL
> INTERNATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Google Science Fair

Google

An online global science competition with three categories for ages 13 to 18 years. The competition is open to 13 to 18 year old students around the globe, who formulate a hypothesis, perform an experiment, and present their results.

Type: Competition
Location: International
Age groups: Secondary students
Dates: Annual
Sponsors/Partners: Lego Education, Google, National Geographic, Scientific American, Virgin Galactic
Website: www.googlesciencefair.com/en/

SECONDARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Big Science Competition

Australian Science Innovations

The Big Science Competition is a 50 minute competition of 30 multiple-choice questions held at schools. The competition challenges students to think critically and solve scientific problems using everyday examples. The questions are aligned to the Australian Curriculum.

Type: Competition
Location: National
Age groups: Secondary students
Contact: asi@asi.edu.au
Website: www.asi.edu.au/programs/big-science-competition/

Australian Science Olympiads

Australian Science Innovations

The Australian Science Olympiad Competition is a national extension programme for top performing secondary science students which culminate in the International Science Olympiads – the Olympic Games for science students.

To earn a spot representing Australia at the International Science Olympiads, Year 10 and 11 students must first sit one or more of the four Australian Science Olympiad Exams on offer in the disciplines of biology, chemistry, earth and environmental science and physics.

Based on their exam performance, top performers are offered a place at the Australian Science Olympiad Summer School. This is a two-week intensive residential programme that gives students the opportunity to study with others passionate about science.

The very best summer school students represent Australia at the International Science Olympiads.

Type: Competition
Location: National
Age groups: Year 10 and 11 students
Sponsors/Partners: Australian Government, BHP Billiton, Monash University, Australian National University
Contact: asi@asi.edu.au
Website: www.asi.edu.au/programs/australian-science-olympiads

NATA Young Scientists of the Year Award

National Association of Testing Authorities, Australia (NATA)

The NATA Young Scientists of the Year Award started in 2007 to foster an interest in science among school children.

Every school across Australia is invited to submit a science project in the competition to win cash prizes.

Type: Competition
Location: National
Age groups: Secondary students
Dates: Annual
Website: www.nata.com.au/nata/news/nata-young-scientist-award

Science for Growth Awards

Primary Industry Centre for Science Education

The National Science for Growth Awards provide an opportunity for school students to improve their science skills and showcase their work by participating in real-life science, individually or in a team.

Students choose a scientific topic that interests them, pose a hypothesis, carry out experiments and work to answer their question using scientific methodology. Students can meet scientists and win cash prizes.

Type: Competition
Location: National
Age groups: Year 9-10 students
Dates: Annual
Sponsors/Partners: Australian Government Cotton Research and Development Corporation, various others
Contact: Science for Growth Awards Coordinator, Julie Crough, 0406 507 697, julie.crough@usq.edu.au
Primary Industry Centre for Science Education, University of Southern Queensland, Toowoomba QLD 4350
Website: www.scienceforgrowthawards.com.au/

EXCURSIONS

Science Gifted and Talented Discovery Program

University of Sydney, Faculty of Science

The Science Gifted and Talented Discovery Program was established in 1996 and has had over 1,650 students participate since its inception.

The workshop provides talented high school science students with additional challenges and stimulation in the areas of biology, chemistry and physics and gives them an on-campus experience. It provides them with the opportunity to engage with University teaching staff and current researchers.

Type: Excursion
Location: National
Age groups: Year 9-10 gifted and talented students
Dates: Biannual, June and October school holidays
Contact: science.alliance@sydney.edu.au
Website: www.sydney.edu.au/science/outreach/high-school/gifted

IN-SCHOOL PROGRAMMES

CSIRO Indigenous STEM education programme: Inquiry for Indigenous Science Students

CSIRO Education

Targeting middle-school students in mainstream metropolitan and regional schools, the Inquiry for Indigenous Science Students (I2S2) programme uses hands-on inquiry-based projects to increase student engagement and achievement in science.

Type: In-school programme
Location: National
Target Audience: Middle school, metropolitan and regional, Indigenous students
Dates: Ongoing
Sponsors/Partners: BHP Billiton
Contact: CSIRO Education and Outreach, education@csiro.au
Website: www.csiro.au/en/Education/Programs/Indigenous-STEM

CSIRO: Science Bootcamp

CSIRO Education

Science Bootcamp is an immersive CSIRO science experience for secondary school students. CSIRO Education and Outreach host science bootcamp in various capital cities throughout the year.

The two-day programme exposes secondary school-aged students to authentic scientific research in contemporary research facilities and gives the students the chance to meet and talk with CSIRO researchers. Students visit working laboratories and see the research currently being performed by scientists, researchers and technicians.

Type: In-school programme
Location: National
Target Audience: Secondary students
Dates: In various capital cities throughout the year
Website: www.csiro.au/en/Education/Community-engagement/Bootcamp

Freely Accessible Remote Laboratories

La Trobe University

Freely Accessible Remote Laboratories (FARLabs) is a virtual laboratory network that brings the state-of-the-art facilities and world-class research of Australia's universities directly into schools.

Teachers and students access equipment via a website portal. Instruction and background knowledge are provided in teaching materials. Four self-contained laboratory activities are currently available. They cover three main themes: Nuclear, Environment and Structure.

The programme aims to engage high-school students with science and maths nationally.

Type: In-school programme
Location: National, online
Target Audience: Secondary students
Sponsors/Partners: James Cook University, Curtin University, Quantum Victoria, the Australian Synchrotron, V3 Alliance Australian Government Department of Education
Contact: Project Coordinator, Guido Cadenazzi, g.cadenazzi@latrobe.edu.au
Paraschos Atsikidis – Teacher Liaison Officer/Assistant Technical Officer, p.atsikidis@latrobe.edu.au
Website: www.FARLabs.edu.au

RESIDENTIAL PROGRAMMES

National Youth Science Forum

National Youth Science Forum

The National Youth Science Forum (NYSF) is a 12 day programme that offers students entering Year 12 the opportunity to explore study options and test-drive careers in the fields of science, engineering and technology.

Students learn how to make informed decisions about courses and careers, and develop a professional skill set to help them realise their potential.

Type: Residential programme
Location: National
Age groups: Year 12 students
Dates: Annual, January
Sponsors/Partners: ANU, Rotary, Lockheed Martin, Amgen Foundation, Cochlear Foundation, CSIRO, CSL Limited, GlaxoSmithKline, Grains Research & Development Corporation, IBM, Monash University, Murray Darling Basin Authority, NSW Trade & Investment, Resmed, University of Melbourne, University of New South Wales, University of Queensland, Australian Academy of Science
Contact: nysf@nysf.edu.au
Website: www.nysf.edu.au

RESOURCES

RiAus

RiAus is Australia's national science channel. It produces thought-provoking and entertaining events, broadcasts and publications as well as education and teacher support programs.

All RiAus education resources are aimed at middle and secondary school teachers and provide a range of products for teachers' own development or to be taken directly into the classroom. The STEM career resources fall into two categories:

- STEM career resources
- STEM career videos

RiAus aims to promote public awareness and understanding of science, making science fun, inspiring and accessible for all Australians.

Type: Resource
Location: National
Target audience: Middle and secondary school teachers
Dates: Ongoing
Sponsors/Partners: Australian Government, Santos, South Australian Government, various
Contact: science@riaus.org.au
Website: http://riaus.org.au/

Science by Doing

Australian Academy of Science

Science by Doing is a comprehensive online science programme for Years 7 to 10 available free to all Australian students and teachers and supported by award winning professional learning modules and a research based professional learning approach.

The purpose of Science by Doing is to improve science learning by:

• Better engaging high school students through an inquiry approach; and by

• Supporting teachers with relevant resources using innovative technology.

The Science by Doing programme provides a practical way of implementing the Australian Curriculum - Science.

Type: Resource
Location: National
Age groups: Year 7-10 students
Dates: Ongoing
Sponsors/Partners: Managed by the Australian Academy of Science with funding from the Australian government
Contact: sbd@science.org.au
Website: www.sciencebydoing.edu.au

UNIVERSITY ENRICHMENT

ConocoPhillips Science Experience

The Science Schools Foundation

The ConocoPhillips Science Experience is a fun three or fout days of science activities for Year 9 and 10 students.

The programme takes place in over 35 universities and tertiary institutions. Participants perform experiments in the laboratories, meet and hear senior lecturers, attend site visits and experience what it is like to be on the campus of a university or tertiary institution. More than 65 000 students have taken this rare opportunity, so far.

The programme also provides information about further studies in science, technology and engineering. It highlights the wide range of careers that allow students to pursue their interest and abilities in the sciences.

The programme aims to provide students who have an interest in science with an opportunity to engage in a wide range of hands-on science activities under

Type: University enrichment
Location: National (over 35 universities and tertiary institutions)
Age groups: Year 9 and 10 students
Dates: Annual, dates vary by state
Sponsors/Partners: Conoco Phillips, Rotary, ASTA, MPs, Young Scientists of Australia
Contact: admin@science experience.com.au
Website: www.scienceexperience.com.au/

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

EXCURSIONS

Get into Genes

Dairy Futures CRC

Get into Genes is a free, hands-on, curriculum-linked workshop for secondary school students that highlights the application of biotechnology to food production.

The programme aims to increase understanding of secondary school students and their teachers of the applications of gene technology in agriculture.

Type: Excursion
Location: Victoria, South Australia, Western Australia
Age groups: Year 10-12 students
Dates: Ongoing
Sponsors/Partners: Various
Contact: Sian Fitzpatrick Education Officer, 03 9032 7185, sian@getintogenes.com.au
Belinda Griffiths, 0400 042 297, belinda.griffiths@dairyfuturescrc.com.au
Website: www.getintogenes.com.au

Kickstart Science workshops

University of Sydney, Faculty of Science

Kickstart workshops give Higher School Certificate science students a chance to do experiments and demonstrations of key ideas in the syllabus that are difficult to do in the classroom.

Kickstart biology, chemistry and physics workshops are held throughout the year, in addition to school holiday workshops and visits to regional areas.

Type: Excursion
Location: Sydney, New South Wales
Target audience: HSC students and teachers
Dates: Throughout the year
Contact: science.alliance@sydney.edu.au
Website: www.sydney.edu.au/science/outreach/high-school/kickstart

These workshops are designed to meet the demand expressed by science teachers in response to changes to the NSW HSC Science syllabus. Parts of the science syllabus requires equipment or expertise in areas that many schools may not be able to provide.

Science in the City

RMIT Science outreach

Science in the City is a specialised tour of RMIT's facilities where students, parents and teachers can learn more about science programmes. Includes laboratory tours.

Students, parents and teachers are invited to tour RMIT science facilities in the heart of Melbourne. See cutting edge learning laboratories and discover the range of programmes on offer including: biology, biotechnology, chemistry, environmental sciences, food science, nanotechnology and physics.

Type: Excursion
Location: Victoria
Age groups: Secondary students
Contact: scienceoutthere@rmit.edu.au
Website: www.rmit.edu.au/events/all-events/tours/2016/march/curious-about-science-at-rmit/

Spectacular Science

University of Sydney Faculty of Science

Designed for high school students from Years 7 to 11, Spectacular Science will engage and spark students' interest in the huge diversity of science. Students will experience first hand some of the intriguing and important areas scientists are working in and spend a spectacular day submerged in science.

Type: Excursion
Location: New South Wales
Age groups: Year 7-11 students
Contact: science.alliance@sydney.edu.au
Website: www.sydney.edu.au/science/outreach/high-school/spectacular-science

IN-SCHOOL PROGRAMMES

Emerging Sciences Victoria

John Monash Science School (JMSS) and the Victorian Department of Education

Emerging Sciences Victoria enables Year 10 science students in government schools across Victoria to study an emerging science subject as part of their own courses. Courses are offered in quantum physics, astrophysics, nanoscience, nanotechnology and bioinformatics.

Type: In-school programmes
Location: Victoria
Target audience: Year 10 science students in government schools
Dates: Ongoing
Sponsors/Partners: Monash University Science Faculty, CISCO, Google, realsmart
Contact: enquiries@emsci.vic.edu.au

Same, Same but Different!

Sydney Institute of Marine Science

Students will investigate the fascinating world of marine invertebrates using both field and laboratory-based activities to explore adaptations in the marine environment.

Type: In-school programmes
Location: New South Wales
Age groups: Secondary Stage 4 students
Dates: Ongoing
Contact: education@sims.org.au
Website: http://sims.org.au/education/

Science Alliance High School Student and Teacher Programs

University of Sydney, Faculty of Science

Science Alliance is the outreach arm of the sciences at the University of Sydney. Activities include public events, programs for high school and primary schools and promoting science through ambassadors, including Dr Karl, Dr Clio Cresswell and mathematics and science ambassador Adam Spencer.

A representative of the Faculty of Science at the University of Sydney can come to schools and inform the students about science options at university.

Type: In-school programme
Location: Sydney, New South Wales
Target audience: Year 10-11 students, teachers
Dates: Ongoing
Contact: science.alliance@sydney.edu.au
Website: www.sydney.edu.au/science/outreach/science-alliance/index

To Settle or Not to Settle

Sydney Institute of Marine Science

Students will investigate the impacts of urbanisation on the marine environment, with a specific focus on Sydney Harbour where more than 50% of the natural shoreline has been lost to artificial surfaces, mostly in the form of seawalls.

The workshop will look at how marine infrastructure is linked to a loss of native biodiversity; how the physical and ecological processes that sustain natural biodiversity are altered, and how these structures act as stepping stones in the introduction and spread of exotic and invasive marine invertebrate species.

Type: In-school programme
Location: New South Wales
Age groups: Secondary students
Dates: 1-day workshop
Contact: education@sims.org.au
Website: www.sims.org.au/education

MENTORING, SCHOOL VISITS AND CAREERS

In2Science

In2Science

In2science is an innovative and proven multi-university schools partnership programme that places university students as 'peer mentors' in Victorian low socio-economic schools.

Enthusiastic peer mentors are role models and work with teachers to show students how the maths and science they are learning relates to their lives. Mentors are volunteer university students who currently study science, technology, engineering or maths (STEM). In2science offers three mentoring models: one-on-one, small group and whole class.

Mentors talk to school students about studying science and maths at university, dispelling misconceptions and encouraging them to continue into higher education.

The programme aims to improve school students' outcomes in maths and science, and consequently to increase the number of school students undertaking STEM subjects to year 12 and beyond.

Type: Mentoring, school visits and careers
Location: Victoria
Age groups: Secondary students
Dates: Ongoing
Sponsors/Partners: Australian Government Department of Education and Training, Monash University, La Trobe University, the University of Melbourne, RMIT, Swinburne University of Technology and the University of Ballarat
Contact: Various university contacts www.in2science.org.au/contact/
Website: www.in2science.org.au/

STEPUP Peer Tutoring Program

Edith Cowan University

The STEPUP Peer Tutor Program is a community service initiative that trains Faculty of Health, Engineering and Science students to volunteer in school classes within science disciplines. These peer tutors become one-to-one or group academic tutors in a secondary school environment.

Type: Mentoring, school visits and careers
Location: Western Australia
Age groups: Secondary students
Dates: Ongoing
Contact: STEPUP Coordinator: Jason Blight 61 8 6304 3451, j.blight@ecu.edu.au
Website: www.ecu.edu.au/faculties/health-engineering-and-science/community-activity/services-and-initiatives/stepup-peer-tutor-program

RESIDENTIAL PROGRAMME

Residential Indigenous Science Experience

University of Melbourne Faculty of Science

The Residential Indigenous Science Experience aims to inspire students about the exciting and rewarding careers that can lead from studying maths and science. Developed by the University of Melbourne and the Gene Technology Access Centre (GTAC), the programme is carefully crafted for Year 9 and 10 students to experience the tangible and hands-on nature of science, including workshops and special presentations on chemistry, geology, genetics, physics and maths, and visits to industry.

Participants are supported throughout the camp by Indigenous and non-Indigenous mentors and the programme includes cultural and social experiences to strengthen the bonds between students and introduce some to the city of Melbourne.

Type: Residential programme
Location: Victoria
Target audience: Indigenous Year 9-10 students
Dates: 1 week programme, November
Sponsors/Partners: Gene Technology Access Centre
Contact: gtac@gtac.edu.au
Website: www.gtac.edu.au/rise/

The Professor Harry Messel International Science School

University of Sydney Faculty of Science

The Professor Harry Messel International Science School (ISS) is a two-week fully residential programme of talks by world-renowned scientists, laboratory tours and hands-on activities.

The ISS has been held on the University of Sydney campus since its inception in 1962.

The programme aims to encourage talented young people to pursue further studies and careers in science.

Type: Residential programme
Location: New South Wales
Target audience: Secondary, academically gifted Year 11-12 Australian and international students
Dates: Annual, 2 weeks in the middle of the year
Contact: iss.info@sydney.edu.au
Website: www.sydney.edu.au/science/physics/international-science-school

UNIVERSITY ENRICHMENT

Early Entry Program

University of Adelaide

The Early Entry Program aims to:
• improve student engagement with Science subjects in SACE Stage 2
• reduce the competitive aspects of receiving a high ATAR
• improve student preparation for entry to undergraduate Sciences studies at the University of Adelaide.
The programme includes mentoring and on-campus activities.

Type: University enrichment
Location: South Australia, partner schools only
Age groups: Year 12 students
Dates: Pilot took place in 2015
Contact: faculty.sciences@adelaide.edu.au
Website: https://sciences.adelaide.edu.au/future-students/undergraduate/earlyentry/

Inspiring and motivating Indigenous students to study science

Edith Cowan University

A programme to encourage, support and enthuse Indigenous students in WA High Schools, particularly those in regional and remote communities, with low socio-economic status backgrounds, to study science subjects at tertiary level.

The programme brings together Western and Indigenous knowledge perspectives to science.

Type: University enrichment
Location: Western Australia
Target audience: Indigenous secondary students
Dates: Ongoing
Website: www.ecu.edu.au/community-engagement/industry-community-education/education-engagement/inspiring-and-motivating-indigenous-students-to-study-science

Extracting Talent for Metallurgys

Murdoch University, School of Engineering and Information Technology

Sponsored by Rio Tinto, and in-kind support from Murdoch University, the Extracting Talent for Metallurgy sessions involve pupils from Years 10 to 12 performing experiments in Murdoch's laboratories, attending lectures and meeting key members of staff.

Type: University enrichment
Location: Western Australia
Target audience: Year 10-12 students, teachers and technicians
Dates: Annual, June and July
Sponsors/Partners: Rio Tinto
Website: www.murdoch.edu.au/Contact-us/General-enquiries/

LabRats

Edith Cowan University, Faculty of Health, Engineering and Science

The LabRats programme is run during the Semester 2 mid-semester break, with students from Years 10 or 11 participating in a full-day of science lectures and workshops.

The programme aims to encourage students to pursue science in upper school, and ultimately at a tertiary level.

Type: University enrichment
Location: Western Australia
Age groups: Year 10 and 11 students
Dates: Semester 2 mid-semester break
Website: www.ecu.edu.au/faculties/health-engineering-and-science/community-activity/services-and-initiatives/labrats

LEAP

LEAP

The LEAP Program aims to demystify the links between school, university and professions. By offering access to a range of university campus, workplace and school-based activities along with online resources, LEAP aims to help students learn more about their career options in selected professions, and the role of university study in attaining their career goals. Business, design, engineering, health, law and science are the six professional fields covered.

LEAP aims to encourage secondary students from low socioeconomic status (SES) communities to consider the role of higher education in achieving their career goals.

Type: University enrichment
Location: Victoria
Target audience: Low SES secondary students
Dates: Ongoing
Contact: 03 9903 4627, leapintosciences@federation.edu.au
Website: www.leap.vic.edu.au/

Pathways

Griffith University

The Griffith Sciences High School Pathway Programs allow senior students to experience a University course while completing their year 11-12 studies, without a significant increase in workload. Students will study the majority of the course content over two years, within the normal delivery of the QCAA Syllabus/ Australian Senior Curriculum specific to their chosen course. All content is delivered through a series of web-based learning resources.

Type: In-school programmes
Location: Queensland
Age groups: Year 11-12 students
Dates: Ongoing
Website: https://scienceonthego.griffith.edu.au/pathways/

Science Outreach

La Trobe University, College of Science, Health and Engineering

The College of Science, Health and Engineering's Outreach programmes introduce high school students to university-level scientific research on three campuses (Albury-Wodonga, Bendigo and Melbourne).

Workshops and activities support Australian secondary schools' Middle Years to VCE-level science curriculum, with student notes and teacher guides provided.

Workshops and activities aim to stimulate and nurture a passion for science, technology, engineering and mathematics among young people.

Type: University enrichment
Location: Victoria
Age groups: Middle secondary students
Dates: Ongoing
Contact: Kevin Hoon, Manager Educational Partnerships
03 9479 1791, k.hoon@latrobe.edu.au
Website: www.latrobe.edu.au/outreach/science

WACE Revision Workshops

Edith Cowan University Faculty of Health, Engineering and Science

The faculty conducts a series of WACE (Western Australian Certificate of Education) revision workshops each year that are designed to assist Year 12 students in their preparation for their final exams.

The workshops are provided freely to all and are delivered by senior teachers with markers present at the sessions covering problem solving skills, exam hints, and demonstrations relevant to each subject. Students are given a booklet of worked examples as well as other helpful information.

Type: University enrichment
Location: Western Australia
Age groups: Year 12 students
Dates: September-October
Website: www.ecu.edu.au/faculties/health-engineering-and-science/community-activity/services-and-initiatives/wace-revision-workshops

You can find additional programmes that involve science in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY SCHOOL
> STATE-SPECIFIC PROGRAMMES

RESOURCES

Microscopes in Schools

Rotary Club of Freshwater Bay, Science Teachers' Association of Western Australia (STAWA), and the Water Corporation

The Magnifying Microscope is a small hand-held unit that allows a child to easily move it around to view items indoors or out. Over 15 000 Magnifying Microscopes have been donated to over 530 schools in every state of Australia, sponsored by 97 Rotary Clubs, corporations and individuals. An Activity Booklet has been produced by the Water Corporation, in conjunction with STAWA, so that teachers are able to integrate the use of the Magnifying Microscopes with their existing curriculum.

The Water Corporation provides copies of the Magnifying Microscopes activities booklet and a free incursion to demonstrate use. The activities focus on the use of microscopes, plant adaptations to water supply, plant structure and soil composition, and include teacher background notes. The microscopes are particularly useful in school gardens.

Type: Resources
Location: Western Australia and national
Age groups: Primary students
Dates: Ongoing
Sponsors/Partners: Rotary, Water Corporation, Alinta Energy
Contact: microscopes@rotaryfreshwaterbay.org.au
Website: www.microscopesinschools.com

PRIMARY AND SECONDARY SCHOOL
> NATIONAL PROGRAMMES

IN-SCHOOL PROGRAMMES

Conservation Volunteers: Revive our Wetlands

Conservation Volunteers Australia

Schools that are part of Revive School Projects receive up to five days of practical assistance from a team from Conservation Volunteers Australia to help make their wetland project a reality.

Type: In-school programme
Location: National
Sponsors/Partners: Amcor, AMP, Aon, Axcelerate, BHP Billiton, BMA, Boral, Chevron, Dalrymple Bay Coal Terminal, Exxon Mobil, Local Fitness, Melbourne Airport, Northpoint, NRMA, Origin, Rio Tinto, QGC, Stockland, Sydney Airport, Tabcorp, Telstra, TATA Consultancy, UXC, We-wood, Woodside, Veolia
Contact: revive@conservationvolunteers.com.au

SECONDARY SCHOOL > NATIONAL PROGRAMMES

COMPETITIONS

Australian Brain Bee Challenge (ABBC)

University of Western Sydney

The Australian Brain Bee Challenge (ABBC) is a competition for Year 10 students to learn about the brain and its functions, learn about neuroscience research and about careers in neuroscience and to dispel misconceptions about neurological and mental illnesses.

There are four Rounds to the Australian Brain Bee Challenge.

Round 1 - Online Quiz

Round 2 - Regional Finals

Round 3 - National Finals

Round 4 - International Brain Bee (IBB)

Type: Competition

Location: National, international

Dates: Annual, June-August

Age group: Year 10 students

Sponsors/Partners: Australian Neuroscience Society, Education Perfect

Contact: abbc@uws.edu.au

Website: www.abbc.edu.au

SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

EXCURSIONS

University of Sydney's Camden Open Day

University of Sydney Faculty of Science

Explore agriculture, environment, science and veterinary science at the University of Sydney's Camden Open Day. Hands-on workshops, talks and meet scientists conducting cutting edge research, plus be entertained by amazing science with a talk by Dr Karl Kruszelnicki.

Type: Excursion

Location: New South Wales

Age groups: HSC agriculture students

Dates: Annual, June

Contact: science.alliance@sydney.edu.au

Website: www.sydney.edu.au/science/outreach/high-school/camden-open-day

University of Western Sydney Environmental Education Programme: Longneck Lagoon partnership -Bandicoots, Bugs and Bush

University of Western Sydney

This enrichment programme at the UWS Hawkesbury campus is run with the Longneck Lagoon Environmental Education Centre. It is based around conservation and management of the Cumberland Plain. Stage 5 science students are given a scenario and learn fieldwork and analysis techniques to explore and come to conclusions about the scenario.

The programme aims to engage students in fieldwork.

Type: Excursion

Location: New South Wales

Age groups: Year 9-10 students

Duration: 2-day programme

Sponsors/Partners: Longneck Lagoon Environmental Education Centre, NSW Department of Education and Training

Contact: longneck-e.school@det.nsw.edu.au

Website: www.westernsydney.edu.au/schoolsengagement/for_schools/partnerships

RESOURCES

Biotech Out of the Box

Murdoch University School of Veterinary and Life Sciences

Biotech out of the Box is a resource designed to support WA high schools in presentation of the biotechnology content introduced by the Curriculum Council of WA to biology and human biology courses. The programme provides loan kits for learning about DNA electrophoresis in schools, teacher and technician training, and curriculum aligned kit activities.

Type: Resource

Location: Western Australia

Target audience: Secondary teachers and technicians

Website: www.murdoch.edu.au/Biotech-out-of-the-box/

UNIVERSITY ENRICHMENT

Agriculture HSC Seminar

University of Sydney Faculty of Science

Spend a day on valuable revision and case studies of current research for the HSC Agriculture courses at the University of Sydney. All aligned with NSW HSC syllabus.

The programme aims to assist Year 11 and 12 agriculture students with revision and provide them with current case studies.

Type: University enrichment

Location: New South Wales

Age groups: Year 11-12 students

Dates: June

Contact: science.alliance@sydney.edu.au

Website: www.sydney.edu.au/science/outreach/high-school/agriculture-hsc-seminar

You can find additional programmes that involve science in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

UNIVERSITY ENRICHMENT

BASF Kids' Lab

Monash University

BASF has partnered with Monash University to bring its global Kids' Lab programme to Melbourne. In June 2015 over 700 Victorian primary school children attended the three day event.

This programme aims to provide fun, hands-on experiments that will teach kids how chemistry is used in daily life.

Type: University enrichment
Location: Victoria
Age groups: Primary students
Dates: Annual
Sponsors/Partners: BASF
Website: www.monash.edu/study/schools

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

RESOURCES

Lab in a Box – VCE Kits for Hire

University of Melbourne School of Chemistry

The School of Chemistry Outreach Program is developing kits of equipment and chemicals for analytical instruments or periodic table lab classes. Kits will come with detailed instructions so teachers can run these programs in their school. These specially designed kits are condensed versions of the Periodic Table / Analytical Instrument Workshop outreach programmes (p44) that are especially suited for small schools or remote areas.

Type: Resources
Location: Victoria
Age groups: Year 11-12 students
Contact: lab-in-a-box@unimelb.edu.au
Website: www.chemistry.unimelb.edu.au/chemistry-outreach-program

UNIVERSITY ENRICHMENT

Analytical Instruments

University of Melbourne School of Chemistry

Students perform analytical exercises using either high-performance liquid chromatography, gas chromatography, UV/vis spectrophotometry and atomic absorption spectroscopy with a follow-up activity on spectrometry.

Type: University enrichment
Location: Victoria
Age groups: Year 12 students
Sponsors/Partners: CSIRO Education
Contact: CSIRO Education, 03 9252 6387, 03 9252 6410
Website: www.chemistry.unimelb.edu.au/chemistry-outreach-program

SCIENCE - CHEMISTRY

Caveman Chemistry

University of Melbourne, School of Chemistry

Extracting metals, making alloys and using non-metallic tools helped prehistoric humans move out of caves. Students make, examine and test properties of some ancient (and more modern) materials in this engaging hands-on program.

Type: University enrichment
Location: Victoria
Age groups: Year 9-12 students
Sponsors/Partners: CSIRO Education
Contact: CSIRO Education, 03 9252 6387, 03 9252 6410
Website: www.chemistry.unimelb.edu.au/chemistry-outreach-program

Energy without CO_2

University of Melbourne School of Chemistry

Australian scientists are world leaders in investigating climate change. This engaging and interactive hour long session will demonstrate energy can be harnessed without generation of CO_2 and analyse causes, consequences and solutions to global warming.

Type: University enrichment
Location: Victoria
Age groups: Year 7-10 students
Sponsors/Partners: CSIRO Education
Contact: CSIRO Education, 03 9252 6387, 03 9252 6410
Website: www.chemistry.unimelb.edu.au/chemistry-outreach-program

The Periodic Table

University of Melbourne, School of Chemistry

This hands-on trip around the periodic table will give students a chance to manipulate elements, explore their properties and examine the patterns and trends in the table's groups and periods.

Type: University enrichment
Location: Victoria
Age groups: Year 10-11 students
Sponsors/Partners: CSIRO Education
Contact: CSIRO Education, 03 9252 6387, 03 9252 6410
Website: www.chemistry.unimelb.edu.au/chemistry-outreach-program

You can find additional programmes that involve science in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

SCIENCE - EARTH SCIENCE/CLIMATE SCIENCE

PRIMARY AND SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

Sustainable Futures

CSIRO Education

Sustainable Futures is an educational programme (including student and teacher resources) that combines the latest in climate science with education in sustainability.

The Sustainable Futures programme is suitable for schools to use with students in Years 3 to 9. Schools receive a set of educational resources which offer a range of ideas and activities to support the teaching of sustainability and the environment in Australian schools.

The programme is currently sponsored by Bayer and had 308 schools across Australia enrolled in 2015.

Type: In-school programme
Location: National
Target audience: Primary and secondary students in Year 3-9, teachers
Sponsors/Partners: Bayer
Contact: CSIRO Education and Outreach, education@csiro.au
Website: www.csiro.au/Portals/Education/Teachers/Classroom-activities/CarbonKids/Carbon-Kids.aspx

Geoscience Australia Education Program

Geoscience Australia

Geoscience Australia's Education Unit delivers education and outreach programs targeted at teachers, students and school groups. The education programme promotes, educates and builds awareness of the earth sciences by supporting the teaching and study of geoscience in primary and secondary schools. The Education Centre hosts onsite visits for 10 000 students annually.

Students and teachers can also access classroom resources aligned to the Australian science and geography curriculum through the Geoscience Australia website.

Type: In-school programme
Location: National, located in ACT
Age groups: Primary and secondary students, teachers
Website: www.ga.gov.au/education

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES

IN-SCHOOL PROGRAMMES

Earth Science WA School Presentations

Earth Science WA

ESWA education officers can offer free earth science presentations to school groups across Western Australia, from Kindergarten to Year 12. Presentations include hands-on learning and resources for teachers.

Type: In-school programme

Location: Western Australia

Target audience: Primary and secondary students and teachers

Dates: Ongoing

Sponsors/Partners: Chamber of Minerals & Energy of WA, Chevron Australia, ConocoPhillips Australia Pty Ltd, CSIRO, Curtin University, Geoconferences (WA) Inc., Shell Australia,Woodside Energy, AngloGold, Ashanti Australia, AusIMM, BP Developments Australia Pty Ltd., Carnarvon Petroleum Ltd., First Quantum Minerals Ltd., Murphy Australia Oil Pty Ltd., Total E&P Australia

Contact: Julia Ferguson, Education Officer, julia@earthsciencewa.com.au

Website: www.earthsciencewa.com.au

Woodside Australian Science Project

Woodside Energy Limited and Earth Science Western Australia

The Woodside Australian Science Project produces support packages for the Earth Science component of the Australian Curriculum. These packages will be filled with hands-on activities for students, with teacher support materials. As each package is released teacher professional development sessions are made available to Western Australian teachers.

Type: Resources

Location: Western Australia

Target audience: Teachers of primary and secondary students in Year 4-12

Dates: Ongoing

Website: www.wasp.edu.au/

RESOURCES

Earth Science WA Kits For Loan

Earth Science WA

ESWA has a range of kits available for loan. The kits are designed to complement earth science teaching, are full of hands-on materials. Loan is free (Western Australia only).

Student Books and Teacher Guides for each kit can be downloaded.

Type: In-school programme

Location: Western Australia

Target audience: Primary and secondary students and teachers

Dates: Ongoing

Sponsors/Partners: Bayer

Contact: Julia Ferguson, Education Officer, julia@earthsciencewa.com.au

Website: www.earthsciencewa.com.au

SECONDARY SCHOOL > NATIONAL PROGRAMMES

IN-SCHOOL PROGRAMMES

The Australian Seismometers in Schools project (AuSIS)

Geophysical Education Observatory component of AuScope Australian Geophysical Observing System (AGOS)

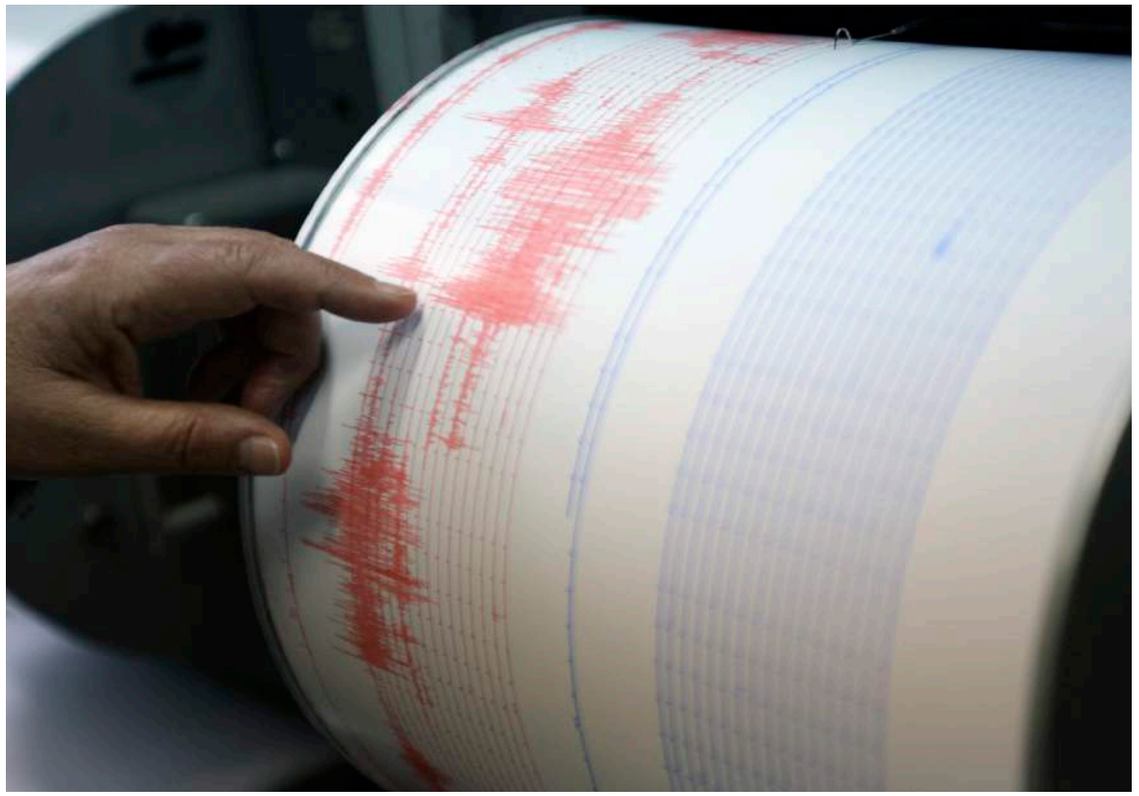
An outreach programme targeted at secondary schools to put 40 earthquake-measuring seismometers in Australian schools, and thereby raise awareness of geoscience through observing our dynamic earth in motion. Students are required to look after their own seismometer and in doing so be a part of a national science experiment.

Type: In-school programme

Location: National

Age groups: Secondary students

Website: http://ausis.edu.au/



You can find additional programmes that involve science in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY AND SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

EXCURSIONS

The Canberra Space Centre

Canberra Deep Space Communication Complex at Tidbinbilla

The Canberra Space Centre provides tailored education programs for students from Years 3 to 12. The programs offered focus on the key role that Australia plays in space exploration and offer students and teachers an interactive and enquiry based program. Over 10 000 students are offered these free, 90-minute programs each year.

The Centre also supports university-level student visits and other programs such as the National Youth Science Forum.

Type: Excursion

Location: National, located at the Canberra Deep Space Communication Complex at Tidbinbilla, ACT

Target audience: Year 3-12 students, teachers

Dates: Ongoing

Sponsors/Partners: NASA

Website: www.cdscc.nasa.gov/Pages/education.html

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

EXCURSIONS

Victorian Space Education Centre

Victorian Space Education Centre at Strathmore Secondary College enables students to explore astronomy, astrophysics and all things space-related, including the ever-popular Mission to Mars program.

Type: Excursion

Location: Victoria

Age groups: Primary and secondary students

Sponsors/Partners: Aerospace Concepts, Agilent Technologies, Analytical Graphics, Inc., Arup, Auspace, Bruker Australia, Education Services Australia, Haines Education, Livingston International, Nida Corporation, Optus Satellites, Science Supplies, Southern Biological, Vega Space

UNIVERSITY ENRICHMENT

University of Melbourne Physics Outreach Programmes

University of Melbourne School of Physics

Programmes run by the School include:

- In-school and on-campus demonstration lectures for primary and secondary schools (MUPPETS, WARP).
- Enrichment studies for secondary school students (Physics VCE Lectures)
- Resources for science teachers
- Annual in service day for secondary science/physics teachers
- University of Melbourne Extension Program (UMEP) in which secondary students may take first year university level physics subjects.

Type: University enrichment

Location: Victoria

Target audience: Primary and secondary students, teachers

Dates: Ongoing

Website: http://physics.unimelb.edu.au/Community/Physics-Outreach

SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

EXCURSIONS

CSIRO-Pulse @ Parkes

PULsar Student Exploration online at Parkes

CSIRO Australia Telescope National Facility

Through the PULSE@Parkes programme, secondary school students take control of the Parkes radio telescope to observe pulsars under the guidance of professional astronomers.

Sessions are usually conducted by remotely controlling the telescope from the Australia Telescope National Facility headquarters in Marsfield, Sydney.

A second programme mode, which does not require visiting Sydney, allows students to work through online learning activities using archival data available from the facility's website.

Type: Excursion

Location: National, via headquarters in Marsfield Sydney or online

Age groups: Year 10-12 students

Dates: Ongoing

Contact: Robert Hollow, PULSE@Parkes coordinator, robert.hollow@csiro.au

Website: http://pulseatparkes.atnf.csiro.au/

Space, Technology, Astronomy & Research Students Program (STARS)

Canberra Deep Space Communication Complex

STARS is a hands-on programme for Year 10 students to control a 34-metre antenna in NASA's Deep Space Network located in Goldstone, California. The students perform real-time observations and analysis of objects in deep space, including black holes, pulsars and planetary bodies such as Jupiter.

STARS has partnered with an equivalent NASA/JPL sponsored programme called GAVRT (Goldstone Apple Valley Radio Telescope), it has also worked with the PULSE@Parkes project.

STARS is currently offered as a free programme utilising volunteer ex-tracking station staff and radio astronomers.

Type: Excursion

Location: National, located at the Canberra Deep Space Communication Complex at Tidbinbilla, ACT

Age groups: Year 10 students

Sponsors/Partners: NASA

Website: www.cdscc.nasa.gov/Pages/education.html

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

CAASTRO in the Classroom

University of Sydney, Physics and Astronomy

Reach for the stars without ever leaving the classroom. Astronomers from the ARC Centre of Excellence for All-Sky Astrophysics (CAASTRO) will be beamed into your classroom via videoconferencing. The content is well aligned with the Cosmic Engine, Space, Astrophysics, and other courses in the NSW Stage 4-6 syllabi. The sessions are one hour long and free of charge.

Type: In-school programme
Location: New South Wales
Age groups: Secondary students
Dates: Ongoing
Contact: citc@caastro.org
Website: www.caastro.org/education-and-outreach/school-engagement/caastro-in-the-classroom

CUDOS Sydney School Visits

University of Sydney, Physics and Astronomy (main host of CUDOS)

Postgraduate students at the Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS) undertake classroom visits to give presentations which feature a range of interactive demonstrations in a way that supplements the existing syllabus while remaining both educational and entertaining. The programme aims to further educate high school students in introductory optics.

CUDOS also has an Optics in the Outback initiative where a team of 2-3 students spends a week travelling to rural Australian high schools.

CUDOS is an ARC Centre of Excellence.

Type: In-school programme
Location: New South Wales
Age groups: Year 9-12 students
Dates: Ongoing
Sponsors/Partners: CUDOS is a research consortium between seven Universities: Sydney, Macquarie, UTS, ANU, Swinburne, RMIT, Monash
Contact: cudos@physics.usyd.edu.au
Website: www.cudos.org.au/outreach/outreach.shtml

Telescopes in Schools

University of Melbourne School of Physics

The Telescopes in Schools Program is run by the Astrophysics Group in partnership with the ARC Centre of Excellence for All-Sky Astrophysics, Quantum Victoria and Melbourne Planetarium.

Ten schools have received telescopes and demonstrations by astrophysicists to date.

The programme aims to promote science and astrophysics.

Type: In-school programme
Location: Victoria
Age groups: Year 7-9 students
Sponsors/Partners: Laby Foundation, Quantum Victoria, ScienceWorks, CSIRO, CAASTRO
Website: http://telescopesinschools.wordpress.com

RESOURCES

Macquarie University Photonics Simulator

Macquarie University Faculty of Science and Engineering, Department of Physics and Astronomy

The online Photonics Simulator gives students information about how photonic components use light to convey signals (information) and shows how these components may be combined to make photonic circuits, such as in a computer, or optical communications networks on a larger scale. It also illustrates why light carries much more information than microwaves (mobile phones) and copper cables (electronics/radio waves).

The resource provides students with an introduction to photonics.

Type: Resource
Location: New South Wales
Age groups: Year 9-12 students
Dates: Ongoing
Contact: scienceenquiries@mq.edu.au
Website: www.research.science.mq.edu.au/cudos/education/Simulator.swf

UNIVERSITY ENRICHMENT

Masterclasses with CERN - ATLAS

ARC Centre of Excellence for Particle Physics at the Terascale (CoEPP)

CoEPP in conjunction with the International Particle Physics Outreach group (IPPOG) offers a one-day masterclass for Year 12 and high-achieving Year 11 students who are studying physics.

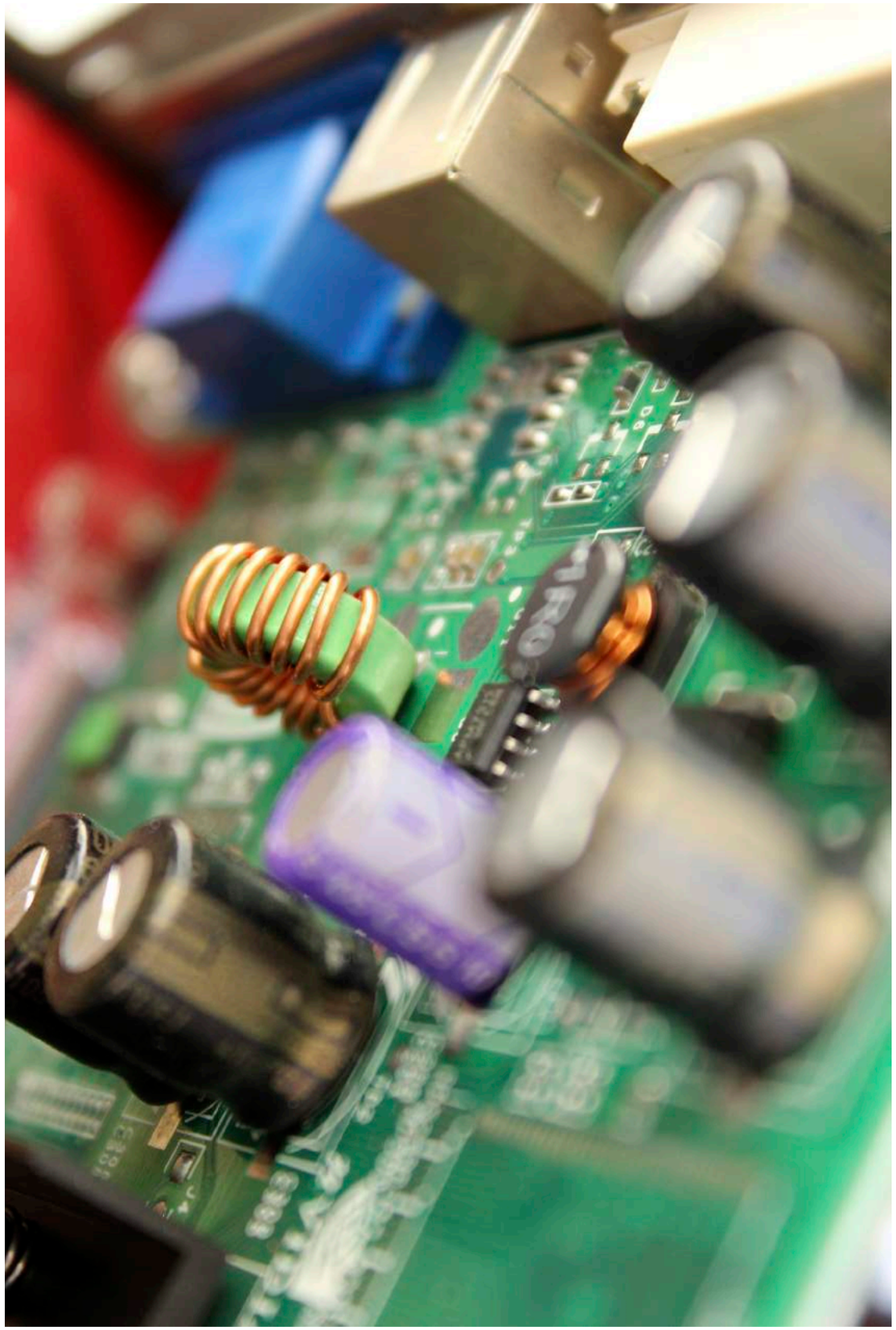
This Masterclass provides an overview of the Large Hadron Colloder (LHC) experiment and the physics involved. Students work with real data from the ATLAS experiment at the LHC and will be taught by physicists on the cutting-edge of big science. The class will be offered at the Universities of Adelaide, Melbourne and Sydney and will be run concurrently. Students will work with CoEPP physicists, researchers from Fermilab (USA) via a video link, and the day will culminate with a virtual visit to ATLAS control room (CERN, Geneva).

The Masterclass will link to the Australian Senior Physics Curriculum.

Students can work with data from the biggest, most complex machine in the world, the Large Hadron Collider, and learn something remarkable from physicists working at the cutting edge of how matter exists, what fundamental rules govern the universe and why it is expanding.

Type: Excursion
Location: University of Adelaide, University of Melbourne, University of Sydney
Age groups: Year 12 (and high-performing Year 11) students
Dates: Annual, July
Contact: Caroline Hamilton, CoEPP Outreach and Communications Officer, caroline.hamilton@coepp.org.au
Website: www.coepp.org.au/outreach-education/high-school-students

You can find additional programmes that involve science in the Integrated STEM and Multidisciplinary chapter beginning on page 97.



PRIMARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Code Club Australia

Telstra Foundation

Code Club Australia is a nationwide network of free, volunteer-led, after-school coding clubs for children aged 9-11.

The club creates projects for our volunteers to teach at after school coding clubs. The projects we make teach children how to program by showing them how to make computer games, animations and websites. Volunteers go to their local junior school or other venue, such as a library, for an hour a week and teach one project a week.

Code Club is about fun, creativity, and learning through exploring. It's important that the children enjoy their time at Code Club. They should understand that they're in charge of the computer, and can (and should) make it do what they want, not the other way around.

Benefits of Code Club, such as learning about computational thinking, or developing expertise in coding, are secondary to these two objectives.

Type: After school club
Location: National
Age groups: Children aged 9-11 years
Dates: Ongoing
Sponsors/Partners: Vivant, Coder Factory, Google CS4HS
Website: www.codeclubau.org

PRIMARY SCHOOL
> STATE PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

Junior Engineers In-School Program

Junior Engineers

Junior Engineers has developed a variety of software programming and technology courses for schools aligned to the national curriculum.

Instructors are available to conduct the courses within school hours.

Type: In-school programme
Location: Queensland, New South Wales, Victoria
Age groups: Year 3 and above
Contact: admin@jnrengineers.com
Website: www.jnrengineers.com/

PRIMARY AND SECONDARY SCHOOL > INTERNATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Open Internet of Things (IoT) Challenge

Eclipse IoT

The Open IoT Challenge is an online contest that rewards developers who create an IoT application using Java Embedded with computer boards, devices or other IoT technologies.

Type: Competition
Location: International
Age groups: Primary and secondary students
Dates: Annual, March-October
Website: www.java.net/challenge/

IN-SCHOOL PROGRAMMES

Cisco Networking Academy

CISCO

Cisco Networking Academy is an IT skills and career building programme for learning institutions and individuals worldwide.

Cisco announced in March 2015 a five-year investment programme to train over 100 000 Australian tertiary and school students in STEM skills. The program, AUSTEM 2020, consists of:

- Training in technology skills via partnerships with not-for-profit higher education providers and schools.
- Connecting students to STEM career and job opportunities through the Find Yourself in the Future programme offered to Cisco Networking Academy students.
- The Cisco Live Melbourne 2015 Student Summit engaging STEM students in how technology will shape the future.
- Around 5000 mentoring hours per year for tertiary education and school STEM students.

Type: In-school programme
Location: International
Age groups: All students
Dates: Ongoing to 2020
Sponsors/Partners: Collaborates with over 120 higher education institutions and schools
Contact: Cisco Networking Academy & Social Innovation Group ANZ & Pacific Islands
embroadb@cisco.com
Phone: +61 2 8446 5064
Website: www.netacad.com/

Hour of Code

Code.org

The Hour of Code is a global movement reaching tens of millions of students in over 180 countries. Anyone, anywhere can organize an Hour of Code event. One-hour tutorials are available in over 40 languages.

Type: In-school programme
Location: International
Age groups: All ages
Dates: December
Sponsors/Partners: Google, Microsoft, Apple, Amazon
Website: https://hourofcode.com/au

We Speak Code

Microsoft

We Speak Code is a special week to celebrate the power of coding throughout Australia – inspired by the international movement Code.org.

The partnership effort has allowed coding events to be showcased in more than 130 schools nationally during the #WeSpeakCode week, with a particular focus on helping students from disadvantaged schools.

Type: In-school programme
Location: International
Age groups: Primary and secondary students
Dates: Annual
Sponsors/Partners: The Smith Family, UTS, Australian Business and Community Network (ABCN) and the Museum of Applied Arts and Sciences, New South Wales, various other sponsors
Website: www.wespeakcode.net/default.aspx

RESOURCES

Cisco Women Rock-IT

CISCO

The Cisco Women Rock-IT programme is a series of quarterly webinars. Some 1000 girls per year in Australia will participate.

The programme aims to show young female students how IT skills can open up interesting and rewarding careers.

Type: Resource
Location: International
Age groups: Primary and secondary students
Dates: Ongoing
Contact: Cisco Networking Academy & Social Innovation Group ANZ & Pacific Islands
embroadb@cisco.com
+61 2 8446 5064
Website: www.cisco.com/web/SG/partners/womenrock-it.html#~Agenda

CS Unplugged

CS Unplugged

CS Unplugged is a collection of free learning activities that teach computer science through engaging games and puzzles that use cards, string, crayons and lots of running around.

We originally developed this so that young students could dive head-first into computer science, experiencing the kinds of questions and challenges that computer scientists experience, but without having to learn programming first.

Type: Resource
Location: International
Age groups: Primary and secondary students
Dates: Ongoing
Sponsors/Partners: Google
Website: http://csunplugged.org/

Start with code

Google

Start with Code is full of resources for parents, teachers, and students, to help people take their first coding steps.

Type: Resources
Location: International
Age groups: All ages
Dates: Ongoing
Website: www.google.com.au/campaigns/startwithcode/

TechPrep

Facebook

TechPrep is a Facebook-led initiative created for parents, guardians and learners who want to understand more about computer science and programming. It's a collection of fun and interesting information, resources and videos tailored to a variety of ages and experience levels.

Type: Resources
Location: International
Target audience: Learners, parents and guardians
Dates: Ongoing
Sponsors/Partners: McKinsey & Company
Website: https://techprep.fb.com/

PRIMARY AND SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

CoderDojo

CoderDojo Foundation

CoderDojo is an open source, volunteer led movement orientated around running free not-for-profit coding clubs (Dojos) for young people. At a Dojo, young people between 7 and 17 learn how to code, develop websites, apps, programs, games and much more. In addition to learning to code, members meet like-minded people, show off what they've been working on and learn new things. CoderDojo makes development and learning to code a fun, sociable and awesome experience.

Type: After school club
Location: National
Age group: 7-17 year olds
Dates: Ongoing
Sponsors/Partners: Fogarty Foundation, Digital Brisbane
Website: https://coderdojo.com/

COMPETITIONS

Bebras Australia Computational Thinking Challenge

Bebras

The Bebras Computing Challenge introduces computational thinking to students. It is organized in over 30 countries and designed to get students all over the world excited about computing.

Each participant gets 45 minutes to answer 15 multiple-choice questions that focus on computational and logical thinking. It is completed online in your own school.

Type: Competition
Location: National
Target audience: Primary and secondary teachers and students
Dates: March and September
Sponsors/Partners: Digital Careers, Australian Government
Contact: Dr. Karsten Schulz
National Program Director Digital Careers
National ICT Australia
karsten.schulz@nicta.com.au, +61 7 3069 0065
Website: www.bebras.edu.au/

Computational and Algorithmic Thinking (CAT) competition

Australian Mathematics Trust

The Computational and Algorithmic Thinking (CAT) competition is a one-hour problem-solving competition which seeks to identify computer programming potential—something which students might not normally have an opportunity to demonstrate.

The CAT is not a programming competition and no programming experience is required. Results in the CAT often enable a talent to be discovered that is not always apparent or sought in normal classroom activities. Some questions test the ability to accurately perform procedures; others require logical thought, while the more challenging problems require the identification and application of algorithms. The inclusion of digital technologies in the Australian Curriculum provides another reason why schools should consider this contest for their students.

There are four papers: Upper Primary, Years 5–6; Junior, Years 7–8; Intermediate, Years 9–10; Senior, Years 11–12. Each paper includes six multiple-choice questions, followed by nine more challenging questions where an integer constitutes the solution to a problem.

Type: Competition
Location: National
Age groups: Year 5-12 students
Dates: Annual
Website: www.amt.edu.au/informatics/cat/

FIRST LEGO League (FLL)

FIRST Australia

FIRST LEGO League (FLL) is a competition catering for upper-primary and lower-secondary school students. Every year, teams of up to ten students build, program and compete with a robot, while also learning about a modern problem in science and engineering and developing solutions.

Type: Competition
Location: National
Age group: Upper primary and lower secondary students
Dates: Annual August-December
Sponsors/Partners: Various
Contact: State contacts listed on website
Website: https://firstaustralia.org/programs/first-lego-league/

COMPETITIONS, MENTORING, SCHOOL VISITS AND CAREERS

Digital Careers

Digital Careers is a collaborative national initiative of industry, research, primary, secondary, and tertiary institutions, and government focused on reducing the critical shortage of Australian ICT professionals by raising awareness and interest in ICT careers, and growing and diversifying the pool of tertiary students preparing for a career in the ICT industry.

Digital Careers focuses on primary and secondary school students, parents, teachers and school based career advisors.

Type: Competitions, mentoring, school visits and careers
Location: National
Target audience: Primary and secondary students, teachers, career advisers
Dates: Ongoing
Sponsors/Partners: Australian Government, NICTA, AIIA, ACS, Intel, SAP, universities
Website: http://digitalcareers.edu.au/

IN-SCHOOL PROGRAMMES

CSIRO ICT in Schools: Intel Galileo Project

CSIRO Education

Piloted in 2014 the Intel Galileo project allows students to use Galileo 2 prototyping board to develop projects. These boards can run using the Arduino IDE or are also compatible with the Linux operating system. ICT in Schools will provide a series of activities to get students started.

Whatever students create must be entered in the Young ICT Explorers competition or CREST awards.

The projects are representative of authentic ICT research and practice and are linked to the Australian Curriculum. The ICT professionals working in the partnership will be able to showcase their careers.

Type: In-school programme
Location: National
Age groups: Primary and secondary students
Sponsors/Partners: Intel
Contact: CSIRO ICT in Schools, ictis@csiro.au

RESOURCES

Intel Innovation Toolbox

Intel

Intel's Innovation ToolBox is a hub of ideas, information, resources and success stories to help drive the next generation of inventors, creators and entrepreneurs in your classroom.

Thanks to the efforts of innovative educators around Australia, as well as Intel Australia's education team, this online ToolBox provides a range of resources that will help you to introduce coding, designing technologies and making in the classroom.

Type: Resource
Location: National
Target audience: Teachers of primary and secondary students
Dates: Ongoing
Contact: educationaus@intel.com
Website: http://innovationtoolbox.intel.com.au/

Intel Teach Elements

Intel

Intel Teach Elements is a series of four free, interactive eLearning courses for teachers. These courses have been adapted for Australia and provide deeper exploration of key 21st Century learning concepts for all teachers.

Each Intel Teach Elements course includes online modules and offline action planning. They can be taken individually, in any order and require no prior IT skills. Intel Teach Elements courses are evidence-based and designed by teachers for teachers, and are mapped to the Australian National Professional Teacher Standards.

Type: Resource
Location: National
Target audience: Teachers of primary and secondary students
Dates: Ongoing
Contact: educationaus@intel.com
Website: www.intel.com.au/content/www/au/en/education/elements.html

UNIVERSITY ENRICHMENT

CSER Digital Technologies MOOC

Computer Science Education Research Group, University of Adelaide

The Computer Science Education Research Group at the University of Adelaide, has developed a number of open, online courses designed to assist teachers in addressing the new Digital Technologies learning area.

These courses cover an introduction to concepts and example activities that help teach computer science and computational thinking at primary and secondary levels. While explicitly connected with the Australian Curriculum, these courses are open to anyone who wishes to learn more about how they could teach computational thinking at these levels.

Type: University enrichment
Location: National
Target audience: Teachers of primary and secondary students
Dates: Ongoing
Sponsors/Partners: Google, Digital Careers
Website: https://csdigitaltech.appspot.com/course

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Junior Engineers after school program

Junior Engineers

The courses develop children's mathematical and problem solving skills through software programming.

Students start at an introductory level and progress towards more sophisticated programming through challenges that are adjusted to individual pace. Junior Engineers runs programs in primary schools and commencing soon in high school and adult education centres. Various levels are available.

Type: After school clubs and holiday programmes
Location: Queensland, Victoria
Age group: Year 3 - junior secondary
Dates: Ongoing
Contact: admin@jnrengineers.com
Website: www.jnrengineers.com/

COMPETITIONS

Young ICT Explorers

SAP

Young ICT Explorers is a competition to encourage school students to create their best Information and Communication Technology (ICT) related projects.

The competition's alignment with the school curriculum enables students to apply what they learn in their ICT classroom to develop a technology-related project of their choice. At the judging event, students have the opportunity to present their project to a judging panel of academia, industry partners and ICT professionals. Each project is assessed on the criteria of creativity, uniqueness, quality, level of difficulty and project documentation.

Type: Competition
Location: National - except South Australia and Northern Territory
Age group: Year 3-12 students
Dates: Annual
Contact: Young ICT Explorers Organising Team, SAP Australia Pty Ltd
Level 7, 168 Walker St, North Sydney NSW, 2060
02 9935 4451, info@youngictexplorers.net.au
Website: www.youngictexplorers.net.au/

IN-SCHOOL PROGRAMMES

Teaching Kids to Code

SCOPE/IT Education

Teaches computer software, website and application design and construction and the necessary skills to help children to think about their own design processes.

Introduces real world, hands on electronic design, combining hardware with software and coding to make some truly fantastic projects.

The programme aims to teach technology that kids can create rather than consume.

Type: In-school programme
Location: New South Wales, Queensland, Victoria, Western Australia, South Australia
Age groups: Year K-8 students
Dates: School year
Contact: Tracey Richardson, 0402002014, tracy@scopeiteducation.com.au
Website: www.scopeiteducation.com.au/

PROFESSIONAL DEVELOPMENT

K-12 outreach

University of Adelaide, School of Computer Science

Through the Computer Science for High School (CS4HS) programme sponsored by Google, we provide a library of class kits for teachers to borrow, as well as a resource site filled with fresh ideas on Pinterest.

In addition, specially organised workshops both on and off the university campus are planned.

Type: Professional development
Location: South Australia
Target audience: Teachers of primary and secondary students
Dates: Ongoing
Sponsors/Partners: Google
Website: https://cs.adelaide.edu.au/outreach/

SECONDARY SCHOOL
> INTERNATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Imagine Cup

Microsoft

Type: Competition
Location: International
Age groups: Students aged 16 years and over
Dates: Annual
Website: www.imaginecup.com/

Imagine Cup is a global student technology programme and competition that provides opportunities for students across all disciplines to team up and use their creativity, passion and knowledge of technology to create applications, games and integrate solutions that can change the way we live, work and play.

The programme aims to inspire young people to develop innovative solutions to problems using coding and new technologies.

UNIVERSITY ENRICHMENT

Computer Science for High Schools (CS4HS)

Google

Type: In-school programme
Location: International
Target audience: Secondary school teachers and students
Dates: Ongoing
Sponsors/Partners: Google
Website: www.cs4hs.com/

CS4HS is an annual funding programme to improve the computer science educational ecosystem by providing funding for the continuation of teacher professional development worldwide.

Google has developed partnerships with universities in Australia, including the University of Sydney, to conduct a CS4HS programme.

The CS4HS programme aims to increase high school teachers' knowledge and ability to promote and teach computer science and computational thinking in classrooms. The programme takes a 'train the trainer' approach. Two or three day workshops for teachers provide training, tips, and actual classroom materials to help them teach programming and computing in schools and turn students into computational thinkers and creators.

SECONDARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Australian Informatics Olympiad

Australian Mathematics Trust

Type: Competition
Location: National
Age groups: Secondary students
Dates: Annual, September
Website: www.amt.edu.au/informatics/aio/

The Australian Informatics Olympiad is a national computer programming competition held annually in early September.

Students write short computer programs to solve three problems that vary in difficulty. The competition does not test computer literacy or knowledge, but is focused on problem solving through programming skills.

A free training programme to help students learn an appropriate programming language is available through the AMT website link.

Code Masters

University of Melbourne, School of Engineering

Type: Competition
Location: Victoria and online
Target audience: Secondary students
Dates: Annually in March
Sponsors/Partners: VLSCI, Google
Contact: schoolsengagement-engit@unimelb.edu.au
Website: codemasters.eng.unimelb.edu.au/

The Code Masters competition is an open coding contest for high school students from across Australia and is held both on-campus and online. This exciting new competition has a junior (Years 7–9) and senior level (Years 10–12), where students are challenged to solve eight computer programming problems in two hours.

FIRST Robotics Competition

FIRST Australia

Type: Competition
Location: National
Age groups: Secondary students aged 14-18 years old
Dates: Annual, ongoing
Sponsors/Partners: Various
Website: https://firstaustralia.org/programs/first-robotics-competition/

A large-scale robotics competition, FRC brings together students and mentors to build robots that perform against teams from all over the world. FRC is a robotics competition, not a robot-fighting contest.

In building their robot and doing all the other things that go with an FRC team, students learn valuable life skills like teamwork, collaboration, public speaking, technical science and engineering skills, and others.

In Australia, FRC teams compete at the Duel Down Under off-season events or official regional competitions in Sydney or the USA.

The programme aims to spread a love of STEM to as many people as possible.

iAwards

Australian Information Industry Association

The iAwards honour companies at the cutting edge of technology innovation as well as leading professionals across the ICT industry. Most importantly, the iAwards recognise the achievements of home-grown Australian innovators.

The iAwards span ICT excellence across seven domains, including a secondary school category, and recognises individual achievement, product innovation, project excellence and entrepreneurial spirit. Winners from each state go on to compete in the National iAwards.

Type: Competition

Location: National

Age groups: Secondary/tertiary students

Dates: Annual

Contact: Australian Information Industry Association
admin@iawards.com.au, 1300 64 145

Website: www.iawards.com.au

National Computer Science School (NCSS) Challenge

Grok Learning

The NCSS Challenge is a five-week competition giving high school students an opportunity to learn and experience computer programming. The Challenge is designed to cater for beginners, intermediate and advanced students.

The Challenge is used by hundreds of teachers as a key part of their existing computing courses. Notes and support are provided to run the NCSS Challenge as a classroom activity and no software installation is required.

The programme aims to teach students to code in Python 3.4.

Type: Competition

Location: National

Age groups: Secondary students

Dates: Annual

Sponsors/Partners: WiseTech Global, Atlassian, Freelancer, Digital Careers, Australian Signals Directorate, Google, Resmed

Contact: University of Sydney
Dr James R. Curran, Director
National Computer Science School
www.ncss.edu.au,+61 2 9036 6037
james.r.curran@sydney.edu.au

Website: https://groklearning.com/challenge/

EXCURSIONS

National ICT Careers Week

ACS Foundation

National ICT Careers Week showcases study and career opportunities in information and communications technology for young people.

In 2014, the annual National ICT Careers Week ran across Australia with over 100 events and activities being presented by businesses, educational institutions, government agencies, industry bodies, women's groups and professional bodies.

Type: Excursion

Location: National

Age groups: Secondary students and other young people

Dates: July 2016

Sponsors/Partners: Australian Computer Society (ACS), Australian Information Industry Association (AIIA), Department of Finance, Australian Council of Deans of Information and Communications Technology (ACDICT), TAFE Directors' Association (TDA), Digital Careers

Contact: Michel Hedley: m.hedley@bigpond.net.au, Kerrie Bisaro: Kerrie.Bisaro@acsfoundation.com.au

Website: www.acsfoundation.com.au/nictcw/

Youth Festival of ICT - YITCON

Australian Computer Society (ACS)

YITCON brings together more than 1000 senior secondary students, university students, and young professionals interested in ICT careers to discover how they can prosper in the digital future.

Type: Excursion

Location: National

Target audience: Senior Secondary students, university students, young professionals

Dates: Biennial; next held in 2016

Contact: Andrew Johnson, 02 9299 3666
andrew.johnson@acs.org.au
ACS Foundation: 02 8296 4443

MENTORING, SCHOOL VISITS AND CAREERS

Careers Foundation for High School Students

ACS Foundation

Donors provide resources and information to help students (Years 8-12) make informed decisions about the type of ICT career that is best for them. One such resource is School Connections where employees of donor companies visit local high schools to talk with students about real life career choices.

Type: Mentoring, school visits and careers

Location: National

Age groups: Years 8-12

Dates: Ongoing

Contact: info@acsfoundation.com.au

Website: www.acsfoundation.com.au

RESIDENTIAL PROGRAMMES

The National Computer Science School (NCSS)

University of Sydney and NICTA

The National Computer Science School (NCSS) provides quality educational opportunities for Australian high school students (Years 11-12) to learn computer-programming skills.

Working with industrial sponsors NCSS provides students with an opportunity to visualise a path to interesting programming-related careers in engineering and computer science.

NCSS requires no local skills support. The residential program, the Summer School, runs each January. Participation in the Summer School is a qualification increasingly recognised by students, high schools and employers.

NCSS is run by the University of Sydney and NICTA with strong sponsorship from both industry and government.

The programme aims to attract students to consider the career choice offered by studying an ICT related subject at University.

Type: Residential programme
Location: National; residential programme at University of Sydney, New South Wales
Age groups: Year 11 and 12 students
Dates: Annual, January
Contact: summerschool@ncss.edu.au
Website: www.ncss.edu.au

UNIVERSITY ENRICHMENT

Professional Development Sessions for Secondary Teachers

Monash University

Monash University Faculty of Information Technology offers professional development sessions for secondary teachers to help bridge the growing digital divide between teachers and tech-savvy students.

Type: University enrichment
Location: National
Target audience: Secondary teachers
Dates: Annual, March
Contact: FIT-Education.Outreach@monash.edu
Website: www.infotech.monash.edu.au/about/competitions/

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

HACTivate

HACT

HACTivate is a technology programme for 12-17 year olds, where they learn to use real industry tools and make the projects they want.

Each course will teach students to create things using industry-standard software and languages. Software is available for free for primary and secondary students - meaning children can continue to develop new skills long after the event.

The programme aims to grow a generation of kids equipped with digital, innovative, creative and entrepreneurial skills.

Type: After school clubs and holiday programmes
Location: Australian Capital Territory
Age groups: 12-17 year olds
Dates: Ongoing
Contact: hello@hact.io
Matt, 0426816288
Website: http://hact.io/

COMPETITIONS

Programming Challenge for Girls (PC4G)

University of Melbourne, School of Engineering

PC4G offers Year 9 girls interested in computing the opportunity to experience the fun of programming at this annual event held in venues across Australia.

PC4G wants girls to experience the fun of programming in teams of two, and engage them before they make their senior high school subject choices. It's designed to be approachable, fun, challenging and educational.

Type: Competition
Location: Victoria
Age groups: Year 9 girls
Dates: Annual, November
Contact: schoolsengagement-engit@unimelb.edu.au
Website: www.eng.unimelb.edu.au/engage/schools/pc4g

EXCURSIONS

Hands on Computing

University of Melbourne, School of Engineering

Year 10 students are invited to visit campus and participate in activities that showcase what computing and information systems are all about. The day's activities do not assume any particular computer skills other than those that a Year 10 student would naturally acquire in the course of their schooling. This event appeals to students with an inquisitive or creative streak, and who show talent for the arts, media, puzzle-solving and mathematics but might not otherwise consider a career in computing.

The programme aims to educate high school students about what exactly computing and information system studies involve, and the exciting careers that follow.

Type: Excursion

Location: Victoria

Age groups: Year 10

Dates: Annual, July

Contact: schoolsengagement-engit@unimelb.edu.au

Website: www.eng.unimelb.edu.au/engage/schools/hands-on-computing

The Big Day In

ACS Foundation

The Big Day In is an IT careers conference designed by students for students. It is designed for both high school (Years 9-12) and university students interested in careers in technology.

The Big Day In brings together technology companies, universities, schools and over 1500 high school students.

The programme aims to familiarise students with the jobs of the future and help them select the subjects that build the skills needed for those jobs.

Type: Excursion

Location: Australian Capital Territory, New South Wales, Victoria, Queensland, Western Aaustralia

Age groups: Year 9-12 students and university students

Dates: Annual two-day career conference

March-July

Sponsors/Partners: IBM, Wisetech Global, Microsoft, Adobe, CSC, Tata Consultancy, Westpac, Technology One, Commonwealth bank, Greater Building Society, Digital Careers, Australian Government

Contact: Enquiries: Kerrie Bisaro, ACS Foundation, Kerrie.Bisaro@acsfoundation.com.au, 02 8296 4444

Email: info@acsfoundation.com.au

Website: www.thebigdayin.com.au

Advanced Manufacturing Industry Schools Pathway Program-ME Program The Internet of Things Challenge

Regional Development Australia (RDA) Hunter

The Internet of Things Challenge is a unique opportunity for students in years 9-12 to learn first-hand about a range of advanced topics from wireless sensor networks to machine to machine (M2M) technologies, to the Internet of Things and their applications with support of industry experts.

Students will build a networked solution to track and analyse heat data for a healthier classroom environment, and comparing weather data with actual local data, using wireless sensor networks, networked devices, and cloud computing and online dashboards.

The Internet of Things Challenge helps students understand the opportunities that arise when we have the ability to collect, correlate, analyse and respond to the data from a range of intelligent sources and systems.

Type: Excursion

Location: Hunter, NSW

Age groups: Year 9-12 students

Sponsors/Partners: CISCO

Contact: Scott Sleap, ME Program Manager, RDA Hunter, 02 4908 7300

Website: www.meprogram.com.au

IN-SCHOOL PROGRAMMES

Algorithmics

University of Melbourne, Monash University

Algorithmics is a new computing subject in the Victorian Certificate of Education, taught by Melbourne and Monash Universities in collaboration with participating secondary schools. It examines how information about the world can be systematically represented and processed, and how such processes can be made sufficiently explicit and precise that they can be implemented in a computer program.

Algorithmics covers systematic methods for analysing real world problems, and identifying salient aspects of the real world to model. It explores the design of algorithms, resulting in a powerful approach to manipulating and reasoning about structured information.

Type: In-school programme

Location: Victoria

Target audience: Higher secondary school students

Dates: Ongoing

Contact: Associate Professor Steven Bird, sbird@unimelb.edu.au, 61 3 8344 1361

Associate Professor Bernd Meyer (Monash), Bernd.Meyer@monash.edu, 61 3 9905 2240

Website: www.cis.unimelb.edu.au/schools/algorithmics.html

MENTORING, SCHOOL VISITS AND CAREERS

The Girls' Programming Network (GPN)

University of Sydney, National Computer School

The Girls' Programming Network (GPN) is a programme developed and run by girls and for girls. Managed by a group of female IT students (both from the University of Sydney and elsewhere), it is targeted at high school girls interested in IT, particularly those interested in learning to program or improving their software development skills.

Type: Mentoring, school visits and careers
Location: Sydney, New South Wales
Age groups: Female secondary students
Dates: Weekend workshops
Contact: gpn@ncss.edu.au
Website: www.ncss.edu.au/girls-programming-network

RESOURCES

MadMaker

Learning & Affect Technologies Engineering, School of Electrical and Information Engineering, University of Sydney

MadMaker is a six-week online course aimed at Year 9 students with a goal to educate them about embedded systems and their use in everyday life. It involves using Arduino Esplora boards to investigate fun and interactive ways to use science, technology, engineering and maths to solve real-world problems.

Teacher training workshops are also available.

Type: Resource
Location: New South Wales
Age groups: Year 9 students and teachers
Dates: 6-week online
Sponsors/Partners: The University of Sydney project Embedded System Design Challenge is partially funded by the Australian Government Department of Education and Training through the Australian Maths and Science Partnerships Program and the STEM Teacher Enrichment Academy.
Contact: info@madmaker.edu.au
Website: www.madmaker.com.au

UNIVERSITY ENRICHMENT

Computer Games Boot Camp

Monash University

The Computer Games Boot Camp (CGBC) is devoted to everything connected to computer games, with team activities, gaming challenges and presentations from industry professionals.

CGBC covers numerous areas of information technology, including but not limited to: multimedia development; digital imaging; programming; games development and applications development and many other diverse ICT fields.

Type: University enrichment
Location: Victoria
Age groups: Secondary students
Dates: Ongoing
Sponsors/Partners: Google, Autodesk
Contact: Andrew Owen, 03 9903 1441, Andrew.owen@monash.edu
Website: https://cgbc.monash.edu

Step IT Up

Monash University

Step IT Up is an opportunity for Year 10 and 11 students to participate in workshops and discussions covering game development, web design, database, programming and multimedia.

Type: University enrichment
Location: Victoria
Age groups: Year 10-11 students
Dates: Ongoing
Contact: Andrew Owen, 03 9903 1441, Andrew.owen@monash.edu
Website: www.infotech.monash.edu.au/about/step-it-up/

Take CTRL

Monash University

Choosing a meaningful, rewarding career path for the future and finding the right course at the right university can be a real challenge. The more talents and interests you have, the harder it is to choose the course that is right for you. Monash FIT wants to help you to Take CTRL of your future. Students in this programme will hear from experts about degree options and graduate outcomes.

The programme helps students gain a new perspective on what the future might hold for them.

Type: University enrichment
Location: Victoria
Age groups: Year 12 students
Dates: Annually, May
Website: www.infotech.monash.edu.au/takectrl/

You can find additional programmes that involve digital technology and ICT in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY SCHOOL
> INTERNATIONAL PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

F1 in Schools Program

Re-Engineering Australia Foundation Ltd.

The F1 in Schools™ Technology Challenge is the world's largest secondary school technology programme. It involves over nine million students from 17,000 schools in 31 nations.

Engages more than 40,000 high school students in Australia across 80 schools and delivers industry-standard technology into schools which is made available to a further 300,000 students outside the programme. Australia is ranked no.1 in the world.

Students as young as 10 are designing, testing and making miniature F1™ cars capable of 80km/h.

Type: In-school programme
Location: International
Age groups: Students in Years 5-12
Dates: Ongoing
Contact: Re-Engineering Australia Foundation Ltd., contact@rea.org.au
Website: www.rea.org.au

PRIMARY AND SECONDARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

Robocup Junior

Robocup

RoboCup Junior is a project-oriented educational initiative that sponsors local, regional and international robotic events.

It is designed to introduce RoboCup to school children, as well as undergraduates who do not have the resources to get involved in the senior leagues. The focus in the junior league is on education.

Type: Competitions
Location: National (except Northern Territory)
Age groups: Primary and secondary students
Dates: Annual, August-September
Contact: Contact form at www.robocupjunior.org.au/contact
Website: www.robocupjunior.org.au

IN-SCHOOL PROGRAMMES

EngQuest

Engineers Australia

EngQuest gives lower primary, primary and middle years students the opportunity to work in teams, at their own pace, applying their problem-solving skills to designing, constructing and unravelling exciting engineering projects.

Type: In-school programme
Location: National
Age groups: Lower primary to middle high school
Contact: engquest@engineersaustralia.org.au
Website: www.engquest.org.au

RESOURCES

Solar Car Challenge

Australian Academy of Technology and Engineering

The Australian Power Institute provides class sets of solar-powered car kits to selected Australian schools.

Students can build, electrically connect and control their car. Students problem-solve to reduce friction, increase efficiency, have contests on furthest distance travelled on one capacitor charge, race up hills and more. The model cars can be disassembled for use by other classes now or in future years.

The module complements topics covered in renewable energy modules.

Type: Resources
Location: National
Age groups: Students in years 6-8 and 10
Dates: Ongoing
Contact: Level 1 / 1 Bowen Crescent, Melbourne, Victoria, 3001
Direct +613 9864 0910
General +613 9864 0900
Pennie Stoyles: pennie.stoyles@atse.org.au
Website: www.stelr.org.au

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

IN-SCHOOL PROGRAMMES

Tinkerklass

Three Farm

Tinkerklass focuses on design thinking and sustainable design methods using digital fabrication techniques, CAD/CAM software and 3D printing.

The tools we use are friendly to beginners such as easy to use intuitive design apps and desktop 3D printers making the programme accessible to kids and adults alike.

The programme is run by Three Farm, a social design enterprise based in Sydney, Australia.

Type: In-school programme
Location: New South Wales
Age groups: Students of all ages, teachers
Dates: Ongoing
Contact: 19 Eve St, Erskineville, Newtown, NSW, 2042
+614 0594 2267
Website: www.threefarm.com

COMPETITIONS

Australian Pedal Prix

University of South Australia

The Australian HPV Super Series is an annual championship held primarily in South Australia featuring human powered vehicles (HPVs) racing around enclosed circuits for a period of either 6 or 24 hours. It attracts teams from all around Australia.

Type: Competition
Location: Western Australia and South Australia
Age groups: General
Dates: Annual
Contact: 08 83571978, 0417824361
Website: www.pedalprix.com.au/news.php

RACQ Technology Challenge Maryborough

Maryborough Chamber of Commerce

Every September over 2000 students from schools across Queensland race human powered vehicles, smilie pushcarts, CO_2 dragsters, solar boats and cars for four state titles across one weekend.

Type: Competition
Location: Queensland
Age groups: Students in Years 5-12
Dates: September
Contact: Nicole Hawker
events@frasercoastopportunities.com.au
07 4120 5630
Website: www.technologychallenge.com.au

UNIVERSITY ENRICHMENT

Endeavour

University of Melbourne

Endeavour is a programme of events run by students and supported by staff from the Melbourne School of Engineering. Endeavour consists of networking events, a schools outreach programme and the exhibition of design and research projects completed by final year engineering and IT students.

The Endeavour Roadshow brings interactive hands-on activities and demonstration to classrooms. The Endeavour Adventure brings school students to the University of Melbourne during the Endeavour engineering & IT Exhibition to view the final year students project that are on exhibit. These two events will encourage students to pursue an engineering and IT career.

Type: University enrichment
Location: Victoria
Age groups: Students in Years 5-10
Dates: Annual, ongoing
Roadshow-July
Adventure workshops- October
Contact: Endeavour Management Team
University of Melbourne
endeavour-mse@unimelb.edu.au
61 3 8344 6642
Website: http://endeavour.unimelb.edu.au

SECONDARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

EXCURSIONS

Discover Engineering Day

Engineering Australia

The Discover Engineering Day programme presents an opportunity for students to be exposed to engineering as an industry and as a profession. The day consists of hands on engineering activities, presentations from student and professional engineers. It is a fun and interactive day where students can learn about what a career in engineering is all about.

Activities on the day can include games technology, robotics and virtual reality, engineering and science lab, presentations from young engineering graduates and University/TAFE course information.

Type: Excursion
Location: National
Age groups: Students in Years 10-11
Dates: 1 day events
Website: www.engineersaustralia.org.au

IN-SCHOOL PROGRAMMES

Engineers Without Borders School Outreach Program

Engineers Without Borders

The Engineers Without Borders (EWB) School Outreach Program works closely with schools enable students to:

- Develop key engineering skills such as problem solving, critical thinking, time management and team work
- Take part in sustainable development activities
- Experience new skills and learnings in a friendly, collaborative and fun environment
- Discover the work of professional engineers

The EWB Regioneering Program takes these workshops and experiences to rural and remote students throughout Australia (supported by Inspiring Australia).

Over the last year, the School Outreach and Regioneering Programs engaged over 8434 urban, remote and regional high school students throughout Australia, visited over 100 schools (including 40 in remote and regional areas) and conducted over 200 workshops.

Type: In-school programme
Location: National
Age groups: Students in Years 8-12
Contact: Jane Hadjion, Director – Operations, j.hadjion@ewb.org.au
Website: www.ewb.org.au/whatwedo/education-research/school-outreach

MENTORING, SCHOOL VISITS AND CAREERS

Robogals

Robogals

Robogals is a student-run organisation that aims to engage schoolgirls in engineering topics from a young age.

Our primary activity is having university student volunteers (both female and male) visit girls primary schools to run LEGO robotics workshops and mentor teams in LEGO robotics competitions. The university students are provided with the necessary training to teach LEGO robotics, and an important goal of the organization is not only to have a positive impact on the schools, but also to provide a rewarding experience for the dedicated students who volunteer their time and skills to the organization.

The programme aims to increase female participation in engineering, science and technology through fun and educational initiatives aimed at girls in primary and secondary school.

Type: Mentoring, school visits and careers
Location: National
Age groups: Year 10-12 girls
Dates: Ongoing
Sponsors/Partners: Various universities
Website: www.robogals.org/

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Indigenous Australian Engineering Summer School

Engineering Aid Australia

Indigenous Australian Engineering Summer Schools are held in Sydney and Perth each year. They provide students with a wide range of engineering activities, site visits and opportunities to meet employers and young engineers.

Type: After school clubs and holiday programmes
Location: New South Wales and Western Australia
Age groups: Indigenous students in years 11-12
Dates: Annual, Summer
Contact: Engineering Aid Australia, PO Box 206, St. Ives, NSW, 2075. 02 9449 6004
Website: http://engineeringaid.org/

Hands on Engineering day

University of Melbourne, School of Engineering

Hands on Engineering day offers current secondary school students who are interested in mathematics and science the opportunity to come on campus and experience what engineering is, through interesting hands-on activities, and to see up close what engineers do.

Type: After school clubs and holiday programmes
Location: Victoria
Age groups: Students in Year 10
Dates: Victorian school holidays
Contact: schoolsengagement-engit@unimelb.edu.au
Website: www.eng.unimelb.edu.au/engage/schools/hands-on-engineering

Year 8 Challenge

Monash University

Three days of engineering workshops for Year 8 students during the school holidays. Six workshops are run by experts across a range of engineering disciplines. Topics include chemical, environmental, civil, electrical, mechanical and aerospace engineering.

Type: After school clubs and holiday programmes
Location: Victoria
Age groups: Students in year 10
Dates: Annual, during school holidays
Contact: Kylie Flitcroft civil.pa@monash.edu.au
Website: http://eng.monash.edu.au/challenge

IN-SCHOOL PROGRAMMES

Engineers in the Classroom

Lockheed Martin

Engineers in the Classroom (EITC) is a STEM initiative - the opportunity for employees to interact with the next generation of engineers and scientists through activities in the classroom. Lockheed Martin Australia currently supports this programme in South Australia. Engineers visit secondary schools in the Adelaide area 10-15 times a year to deliver lessons and activities. Activities include teamwork in construction; the effects of gravity and lift; and building a parachute.

Type: In-school programme
Location: South Australia
Age groups: Students in Years 7-12
Contact: engineers-fc.aero@lmco.com
Website: www.lockheedmartin.com.au/us/aeronautics/community-relations/engineers-in-the-classroom.html

IN-SCHOOL PROGRAMMES

Land Rover 4×4 programme in Schools Technology Challenge

Re-Engineering Australia Foundation Ltd.

The Land Rover 4×4 in Schools Technology Challenge is to build a radio controlled four-wheel drive (4×4) vehicle to the specifications provided that will successfully navigate and complete obstacles on an off road test track that is just as demanding as the real thing, and emulates the capabilities of a full size 4×4 vehicle. Each team will enter the vehicle into a state final to compete for a place at the Australian national final with eight schools.

Type: In-school programme
Location: Western Australia and South Australia
Age groups: Students in years 7-12
Dates: Annual
Contact: Re-Engineering Australia Foundation Ltd., contact@rea.org.au
Website: www.rea.org.au

Questacon Smart Skills

Questacon

Questacon Smart Skills is a free touring programme developed for secondary school students. The programme immerses students in ideas, technology and creative problem solving, using interactive and challenging STEM-themed workshops.

The workshops focus on imparting a process of innovative design thinking, and on equipping students with the confidence to test and refine ideas through hands-on digital and practical prototyping.

Type: In-school programme
Location: New South Wales, South Australia, Queensland
Age groups: All ages
Dates: Varies by State
Contact: 1800 889 995 outreach.bookings@questacon.edu.au
Website: www.questacon.edu.au/outreach/programmes/questacon-smart-skills

STEM Sista

Northern Advanced Manufacturing Industry Group

Launched in 2014 and set to expand in 2015, STEM Sista is supported by the Department of State Development in South Australia.

The aim of the programme is to develop young women to realise they can be more and do more and ultimately achieve the goals they set for themselves in STEM related careers.

Type: In-school programme
Location: South Australia
Age groups: Female students in Year 10
Contact: enfo@concept2creation.com.au
Website: www.concept2creation.com.au

RESIDENTIAL PROGRAMMES

Women in Engineering Summit

University of Wollongong

A five day STEM camp for young women who are entering Years 10 and 11.

Includes lectures and workshops to learn more about the various fields of engineering, and find out what it's like to study engineering at university. Visits to local engineering sites to learn more about what engineers do and the differences they make. The Summit will also provide an opportunity to meet industry leaders, academics and other women with similar interests from New South Wales and the Australian Capital Territory.

Explore engineering through the themes of the human body, the natural environment, sustainable design, and creative thinking.

Type: Residential programme
Location: New South Wales and the Australian Capital Territory
Age groups: Female students in Years 10-11
Dates: Annual, January
Contact: eis-events@uow.edu.au
Website: http://eis.uow.edu.au/wie-summit/index.html

Exploring Interests in Technology and Engineering (EXITE)

IBM

Exploring Interests in Technology and Engineering (EXITE) camps are designed to help girls understand how rewarding engineering and technology careers can be and how they offer opportunities to be creative, to become a leader and to give back to the community.

The programme aims to help fuel girls' interest in taking science and maths classes throughout high school.

Type: Residential programme
Location: Sydney, Melbourne, Brisbane, Gold Coast, Ballarat
Age groups: Female students in Years 8-10
Dates: Annual, each summer
Contact: eis-events@uow.edu.au
Website: http://eis.uow.edu.au/wie-summit/index.html

UNIVERSITY ENRICHMENT

ENGenuITy

Monash University

A line- up of hands-on activities will expose girls to the different fields of engineering and IT. They will have the chance to meet like-minded students and find new friends. A speed networking session with alumnae working in industry, female researchers and current students will give them a chance to get insights into the diverse experiences and career paths in engineering and IT from a female perspective.

Type: University enrichment
Location: Victoria
Age groups: Students in Year 10
Dates: Annual
Sponsors/Partners: State Departmentss of Education
Contact: Sharon Parr shparr@au1.ibm.com Lisa Marland lmarland@au1.ibm.com
Website: www-07.ibm.com/employment/au/diversity/women.html

You can find additional programmes that involve engineering and technology in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY SCHOOL
> NATIONAL PROGRAMS AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Let's Count

The Smith Family

An early mathematics programme for disadvantaged Australian children aged three to five. The programme supports parents and early year educators to develop the maths skills of the children in their care by noticing, exploring, and talking about numbers, counting, measurement and patterns in their daily lives.

Type: After school clubs and holiday programmes
Location: National
Age groups: Parents and early year educators of children aged 3 to 5 years
Dates: Ongoing
Sponsors/Partners: Origin Foundation, BlackRock Investment Management
Website: www.thesmithfamily.com.au/what-we-do/our-work/at-school/early-years-and-primary/lets-count

PRIMARY AND SECONDARY SCHOOL
> NATIONAL PROGRAMS AND RESOURCES

COMPETITIONS

Australasian Problem Solving Mathematical Olympiads (APSMO)

Australasian Problem Solving Mathematical Olympiads

APSMO is a not-for-profit organisation that offers a range of mathematical competitions for students aged from around 8 to 14. The programs focus on the students' ability to solve mathematical problems in a creative manner - as opposed to simply reaching a solution using a prescribed method.

APSMO also provides a range of resources to complement the teaching of mathematical problem solving.

The programme aims to introduce students to important mathematical concepts; teach major strategies and develop flexibility for problem solving; foster creativity and ingenuity and strengthen intuition; and stimulate enthusiasm and enjoyment of mathematics.

Type: Competition
Location: National
Age groups: Students aged 8-14 years
Dates: Ongoing
Contact: enquiries@apsmo.info
02 9114 9255
Website: http://apsmo.edu.au

Australian Mathematics Competition (AMC)

Australian Mathematics Trust

The AMC is for students of all standards. Students are asked to solve 30 problems in 60 minutes (Years 3 to 6) or 75 minutes (Years 7 to 12). Students mark their responses on a mark-sense sheet and these are processed by computer. The earliest problems are very easy. All students should be able to attempt them. The problems get progressively more difficult until the end, when they are challenging to the most gifted student.

Type: Competition
Location: National
Age groups: Students in Years 3-6 and Years 7-12
Sponsors/Partners: Commonwealth Bank
Website: www.amt.edu.au/mathematics/amc

GetSet

Australian Mathematics Trust

GetSet provides self-paced, online courses designed to help students of all levels prepare effectively for the Australian Mathematics Trust competitions. The courses consist of a collection of problem sets and mock contests that are to be solved by students in a recommended sequence. All problem sets and mock contests are auto-graded and students are presented with a comprehensive performance report with suggested areas for improvement.

Type: Competition
Location: National
Dates: Annual
Age groups: Primary and secondary students
Website: http://amt.edfinity.com/

Have Sum Fun Online

Mathematical Association of Western Australia (MAWA)

Have Sum Fun Online is a maths quiz of NAPLAN-type problems for year-level teams of four students.

The competition consists of three rounds of 10 questions, where student teams have one hour to complete each round of questions. Each round is accessible on the HSFOL website for one week, and rounds are a week apart.

The programme aims to foster mathematical problem solving for students in Years 3-10 across Australia.

Type: Competition
Location: National
Age groups: Year 3-10 students
Dates: Ongoing
Sponsors/Partners: Australian Association of Mathematics Teachers
Website: www.havesumfunonline.com/index.php

Mathematics Challenge for Young Australians

Australian Mathematics Trust

The Mathematics Challenge for Young Australians (MCYA) is a staged programme designed to help teachers motivate, stimulate, encourage and develop mathematically interested students in Years 3 to 10.

Type: Competition
Location: National
Age groups: Students in Year 3-10
Website: www.amt.edu.au/mathematics/mcya/

The MCYA is an ideal programme for extension studies and for students who would benefit from greater challenge. The first two stages of the MCYA provide problems and course work to extend and develop students in mathematical problem solving, while teachers receive detailed solutions and support materials.

The MCYA programme may be particularly useful in schools where teachers work in isolation and have a handful of talented students spread out over a number of classes.

There are three independent stages: the Challenge Stage, the Enrichment Stage and the Australian Intermediate Mathematics Olympiad (AIMO).

The MCYA aims to encourage and foster greater interest in mathematics and identify and recognise the achievements of talented students.

IN-SCHOOL PROGRAMMES

Schools Outreach Program

Australian Mathematical Sciences Institute (AMSI)

The AMSI Schools Outreach Program aims to provide professional development for teachers of mathematics in primary and secondary schools in the form of workshops, in-class support, modelled lessons and programme development support.

Type: In-school programme
Location: National
Age groups: Primary and secondary
Dates: Ongoing
Contact: enquiries@amsi.org.au
Website: www.amsi.org.au

Choose Maths

Australian Mathematical Sciences Institute

Choose Maths is a five-year national programme aimed at changing the public perception of mathematics and statistics as a career choice for girls and young women. It has four components:

1. Mathematics-Ready Teacher Professional development

2. Women in Mathematics Careers Awareness Campaign

3. Inspiring Women in Mathematics Network

4. Annual BHP Billiton Awards for Excellence in the Teaching and Learning of Mathematics

Type: In-school programme
Location: National
Target audience: Students, parents and teachers
Dates: Ongoing
Sponsors/Partners: BHP Billiton
Contact: enquiries@amsi.org.au
Website: www.amsi.org.au

RESOURCES

Connect with Maths

Australian Association of Mathematics Teachers

The Connect with Maths project aims to build a dynamic education community to support Australian teachers of mathematics. Teachers can access a range of networks and activities that support the implementation of mathematics in the Australian Curriculum.

Priorities of the Connect with Maths project are:

• Increased pedagogical knowledge of the teaching of mathematics and engagement of contemporary learners

• Deep understanding of content knowledge which supports the delivery of the Australian Curriculum - Mathematics

• Increased technological knowledge for teachers to participate with colleagues in online networks and to build teacher confidence in using technology for student learning.

Type: Resources

Location: National

Target audience: Teachers of all levels

Dates: Ongoing

Sponsors/Partners: Australian Government-Department of Education.

Contact: office@aamt.edu.au

Website: www.aamt.edu.au/Communities

The Improving Mathematics Education in Schools

Australian Mathematical Sciences Institute (AMSI)

The Improving Mathematics Education in Schools (TIMES) project provides resources for maths teachers. It has had a significant impact on mathematics education, most notably through its textbooks and teacher materials. Modules are organised under the strand titles of the Australian Curriculum: Number and Algebra; Measurement and Geometry; Statistics and Probability.

Type: Resources

Location: National

Target audience: Primary and secondary teachers

Dates: Ongoing

Contact: enquiries@amsi.org.au

Website: http://amsi.org.au/

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMS AND RESOURCES

COMPETITIONS

Investigating with Mathematics

Mathematical Association of NSW (MANSW)

Students explore real life problems and situations that engage them in mathematics, formulating their own questions from a given situation. All NSW students from Kindergarten to Year 10 are eligible to enter. There are three categories: individual, small group, and whole class. Schools may submit three entries per category.

The programme aims to promote interest in mathematics and foster positive attitudes amongst students, teachers and parents.

Type: Competition

Location: New South Wales

Age groups: Year K-10 students

Dates: Ongoing

Contact: admin@mansw.nsw.edu.au, 02 9715 5800

Website: www.mansw.nsw.edu.au/student-activities/investigating-with-mathematics

Mathematical Association of Tasmania (MAT) competitions

Mathematical Association of Tasmania (MAT)

MAT aims to support teachers in their teaching of mathematics by providing a combination of engaging and challenging mathematics activities for students. MAT conducts a number of student activities unique to Tasmania, including the State Mathematics Relay, the MAT Mathematics Problem Competition and ML Urquhart Mathematics Competition.

Type: Competition

Location: Tasmania

Age groups: Primary and secondary students

Dates: Various

Contact: lauren.beams@education.tas.gov.au, 03 6392 2272

Website: http://mat.aamt.edu.au/Activities/Student-Activities

Student Activities

Mathematical Association of South Australia (MASA)

The Mathematical Association of South Australia offers a variety of competitions and activities for students, including the Maths Talent Quest and the SA Maths in Schools competition.

Type: Competition

Location: South Australia

Age groups: Primary and secondary students

Dates: Various

Contact: masamail@internode.on.net, 08 8362 4332

Website: www.masanet.com.au/home/

Student Activities

Mathematical Association of Victoria (MAV)

The Mathematical Association of Victoria offers a variety of competitions and activities for students, including state-wide Games Days and the MAV Maths Talent Quest, an investigation in which students examine a situation which lends itself to inquiry.

The programme aims to promote interest in mathematics and foster positive attitudes amongst students, teachers and parents.

Type: Competition
Location: Victoria
Age groups: Primary and secondary students
Dates: Annual
Contact: office@mav.vic.edu.au, 03 9380 2399
Website: www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html

Western Australian Junior Mathematics Olympiad (WAJO)

University of Western Australia

The Olympiad is a calculator-free competition that challenges students to solve a series of individual and team-based mathematical problems using sheer brain power.

WA high schools - both public and independent - are encouraged to enter a team of four students to compete for their school.

Type: Competition
Location: Western Australia
Age groups: Year 9 and younger
Sponsors/Partners: Various
Contact: wajo@maths.uwa.edu.au, 08 6488 3338
Website: www.maths.uwa.edu.au/community/olympiad

EXCURSIONS

Luna Park

Mathematical Association of NSW (MANSW)

MANSW has prepared resources for teachers who would like to take their students on an excursion to Luna Park for a great day of fun whilst engaged in the processes of working mathematically.

Type: Excursion
Location: New South Wales
Age groups: Year 5-6, 7-10 and 11-12 students
Dates: Various 2016 dates
Contact: admin@mansw.nsw.edu.au 02 9715 5800
Website: www.mansw.nsw.edu.au/student-activities/luna-park

IN-SCHOOL PROGRAMMES

Inquisitive Minds problem-solving workshops

Mathematical Association of NSW (MANSW)

MANSW – Inquisitive Minds Problem Solving Workshops provide students with unique, engaging maths activities.

Stage 2 Out of the Box, Stage 3 Out of the Box and Year 7 to 9 Problems, Patterns, Pictures, Puzzles Workshops each include an interactive lesson on strategic problem solving and a hands-on problem solving competition.

Workshops can be tailored to each school's needs and are available at all ability levels.

Type: In-school programmes
Location: New South Wales
Age groups: Year 3-10 students
Dates: Various dates
Contact: admin@mansw.nsw.edu.au, 02 9715 5800
Website: www.mansw.nsw.edu.au/student-activities/problem-solving-workshops

RESOURCES

Mathematical Association of Tasmania (MAT) resources

Mathematical Association of Tasmania (MAT)

The Mathematical Association of Tasmania offers a variety of resources to assist maths teachers at all levels. These include classroom tasks for students of all ages and early childhood learners.

Type: Resources
Location: Tasmania
Target audience: Year K-12 teachers
Dates: Ongoing
Contact: lauren.beams@education.tas.gov.au, 03 6392 2272
Website: http://mat.aamt.edu.au/Activities/Classroom-tasks

Mathematical Association of Victoria resources

Mathematical Association of Victoria (MAV)

The Mathematical Association of Victoria offers a variety of resources to assist teachers and students in all school years. Resources include curriculum planning, podcasts, exam papers and revision resources. MAV members can access Teach Maths for Understanding, a planning resource for the Australian Curriculum from Foundation to Year 10.

Type: Resources
Location: Victoria
Age groups: Year K-12 students and teachers. Some resources available to MAV members only.
Dates: Ongoing
Contact: office@mav.vic.edu.au, 03 9380 2399
Website: www.mav.vic.edu.au/index.php

Teacher Resources

Mathematical Association of South Australia

The Mathematical Association of South Australia offers a variety of resources to assist mathematics teachers at all levels.

Type: Resources
Location: South Australia
Target audience: Year K-12 teachers
Dates: Ongoing
Contact: masamail@internode.on.net, 08 8362 4332
Website: www.masanet.com.au/teacher-resources/

SECONDARY SCHOOL
> NATIONAL PROGRAMS AND RESOURCES

COMPETITIONS

Australian Statistics Competition

Australian Mathematics Trust

The Australian Statistics Competition encourages students to experience learning and decision making through the collection and analysis of data. Students will observe the importance of mathematics for identifying patterns and associations which form the basis for real-world learning and decision making.

The overall process of developing, conducting and reporting the data-based project will encourage students' creativity, planning, teamwork, accuracy, mathematics and computing skills, mathematical and statistical thinking, and clarity of communication.

Participants will receive positive feedback through certificates, commendations for excellence and even cash prizes for state and national winners.

Type: Competition
Location: National
Age groups: Secondary students
Sponsors/Partners: Australian Bureau of Statistics, Statistical Society of Australia
Website: www.amt.edu.au/mathematics/asc/

International Mathematical Modelling Challenge

International Mathematical Modelling Challenge

The International Mathematical Modelling Challenge (IM2C) is a team competition held over a number of days with students able to use any inanimate resources to solve a mathematics problem. The problems require different kinds of mathematics for their analysis and solution. The IM2C provides students with a deeper experience both of how mathematics can explain our world and what working with mathematics looks like.

The programme aims to promote the teaching of mathematical modelling and applications at all educational levels for all students.

Type: Competition
Location: National
Age groups: Secondary students
Dates: Mid-March to early May 2016
Sponsors/ Partners: Consortium for Mathematics and Its Applications; NeoUnion ESC Organization
Contact: info@immchallenge.org
Website: http://immchallenge.org/Index.html

Mathematical Engagement and Mathematical Olympiad

Australian Mathematics Trust

The Australian Mathematical Olympiad Committee offers a variety of activities ranging from correspondence programmes to residential schools, run with the assistance of academic mathematicians throughout Australia. These programmes, which are presented in a carefully sequenced arrangement of enrichment activities, offer valuable tuition and resources to students. The most gifted students may be selected for more specialised training directed towards the Mathematical Olympiad.

Type: Competition, in-school programme
Location: National
Dates: Annual
Sponsors/Partners: Commonwealth Bank
Website: www.amt.edu.au

IN-SCHOOL PROGRAMMES

CSIRO Indigenous STEM Education Programme: Prime Futures

CSIRO Education

This programme targets middle-school students in mainstream metropolitan and regional schools, and provides tools and support to improve mathematics outcomes for students. It also provides mathematical preparation for STEM careers.

Type: In-school programme
Location: National
Age group: Year 10 students
Dates: Ongoing
Sponsors/Partners: BHP Billiton
Contact: CSIRO Education and Outreach, education@csiro.au
Website: www.csiro.au/en/Education/Programs/Indigenous-STEM

RESIDENTIAL PROGRAMME

National Mathematics Summer School

Australian National University, Australian Association of Mathematics Teachers

The National Mathematics Summer School was founded in 1969 and is academically sponsored by the Australian National University and the Australian Association of Mathematics Teachers Inc. Students are selected by the mathematics teachers association in each state and territory. During the two week school, students study three topics in higher mathematics and there are, in addition, guest lectures and a special lecture at the Academy of Science.

Type: Residential programme
Location: National
Age groups: Senior secondary
Dates: Annual, January, 2 weeks
Sponsors/Partners: ANU, UWS, University of Sydney, Monash, UNSW, Rotary, Lions
Contact: nmss@maths.usyd.edu.au
Website: www.nmss.edu.au

National Financial Literacy Curriculum Resource

Commonwealth Bank

This free resource helps teachers to improve their students' knowledge, skills and understanding of financial literacy.

There are 12 modules which have been mapped to the Year 7-10 curriculum in each state and territory. Material can be saved or printed as required. General notes will help teachers use the resources

Type: Resources
Location: National
Age groups: Year 7-10 students
Dates: Ongoing (online)
Sponsors/Partners: NSW Department of Education and Training
Website: www.commbank.com.au/about-us/in-the-community/understanding-money/commonwealth-bank-foundation/financial-literacy-teaching-resources/curriculum-resource.html

SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMS AND RESOURCES

COMPETITIONS

Problem Solving Competition

University of Queensland/Queensland Association of Mathematics Teachers

Held around Pi Day, the annual UQ/QAMT Problem Solving Competition is open to all students of secondary schools in Queensland. There are three competition papers, one each for Years 7 and 8, Years 9 and 10, and Years 11 and 12. All papers are two hours long. The problems do not usually require any greater knowledge than that possessed by good students but will need a certain amount of ingenuity and thought for their solution.

Type: Competition
Location: Queensland
Age groups: Secondary students
Dates: March 2016
Sponsors/Partners: Wolfram
Contact: qamt@uq.net.au, 07 3365 6505
Website: www.maths.uq.edu.au/qamt/

EXCURSIONS

mathsINSPIRATION

Mathematical Association of NSW (MANSW)

A brilliant, lively, informative and funny show - mathsINSPIRATION is coming again from the UK in 2016 to entertain and inspire students and teachers about the wonders of mathematics.

Type: Excursion
Location: New South Wales
Age groups: 15-17 year olds
Dates: August 2016
Contact: admin@mansw.nsw.edu.au, 02 9715 5800
Website: www.mansw.nsw.edu.au/student-activities/mathsinspiration

Mega Maths Day

University of Sydney Faculty of Science

A series of workshops showcasing the importance of maths in a variety of settings.

The programme aims to give Year 10 students the opportunity to find out just how important a solid background in maths is for a huge array of disciplines and careers

Type: Excursion

Location: New South Wales

Age groups: Year 10 students

Dates: Annual, 1 day workshop

Contact: science.alliance@sydney.edu.au

Website: www.sydney.edu.au/science/outreach/high-school/mega-maths-day

OUT OF SCHOOL PROGRAMMES

Girls Do The Maths

University of New South Wales Faculty of Science, School of Mathematics and Statistics

An annual series of free, one-day workshops for female students finishing their high school studies (Years 11 and 12).

Invited speakers talk about their careers, with sessions on the practicalities of university life, including information about courses and degrees, applying for scholarships and programmes for talented students.

The programme aims to encourage female students to consider mathematics as a career.

Type: Out of school programme

Location: New South Wales

Age groups: Female Year 11 and 12 students

Dates: Annual

Contact: DoTheMaths@unsw.edu.au

Website: www.maths.unsw.edu.au/highschool/girls-do-maths

HSC Mathematics Extension 1&2 Day

Mathematical Association of NSW (MANSW)

Formerly known as Talented Students Day, this event is designed to be a challenging and intellectually stimulating occasion for students who are studying Mathematics Extension 1 or 2. In the morning there are two sessions. Students will be exposed to areas of mathematics which they may not have met previously.

During the afternoon, students attend two sessions of their own choice on syllabus topics which interest them or for which they feel they need further assistance.

Type: Out of school programme

Location: New South Wales

Age groups: Secondary students studying Mathematics Extension 1 or 2

Contact: admin@mansw.nsw.edu.au, 02 9715 5800

Website: www.mansw.nsw.edu.au/student-activities/hsc-mathematics-extension-1-2-day-formerlytalented-students-day

UNIVERSITY ENRICHMENT

Gippsland Access and Participation

Federation University

The Gippsland Access and Participation (GAP) project focuses on two main areas:

• Connecting teachers in regional and remote areas: Recognising the difficulties teachers in regional and rural areas often face, it supports maths and science teachers in isolated areas of Gippsland with local networking and professional development activities.

• Addressing the decline in maths and science. By making learning fun, interesting and engaging, the GAP project is working to reverse the decline in the numbers of students studying maths and science at secondary school in Gippsland.

Type: University enrichment

Location: Gippsland, Victoria

Target audience: Secondary students and teachers

Contact: gapproject@federation.edu.au

Website: www.federation.edu.au/gap

Young Mathematicians Programme

University of Newcastle Faculty of Science and Information Technology

The University of Newcastle Young Mathematicians Program (UONYMP) is a free programme of mathematics enrichment activities run by interested mathematicians from the Faculty of Science and Information Technology.

The programme aims to create a small scale but active and vibrant mathematics community consisting of interested Year 9-10 students and interested practising mathematicians

Type: University enrichment

Location: New South Wales

Age groups: Students in Years 9-10

Dates: The full programme runs for one year with components in each of the four school terms.

Sponsors/Partners: CARMA priority research centre for computer-assisted research mathematics and its applications, Newcastle Mathematics Association, University of Newcastle Mathematics Society

Contact: Malcolm.Roberts@newcastle.edu.au

Website: www.newcastle.edu.au/about-uon/governance-and-leadership/faculties-and-schools/faculty-of-science-and-information-technology/about-us/community-outreach/young-mathematicians-program#Young Mathematicians Program

You can find additional programmes that involve mathematics in the Integrated STEM and Multidisciplinary chapter beginning on page 97.

PRIMARY SCHOOL
> NATIONAL PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

The G.A.T.E.WAYS Eureka Program

Gifted and Talented Education, Extension and Enrichment (G.A.T.E.WAYS)

The Eureka Program is a one-day event where children participate in three hands-on workshops based on a theme. Each term the theme changes to focus on a different curriculum area. Previous themes have included 'Secrets of Science,' 'You Can Count On Maths,' 'History Matters,' 'What Nonsense,' and 'Secret Maths.'

Type: After school clubs and holiday programmes

Location: National

Age groups: Primary students

Dates: Ongoing, some terms are not STEM focused.

Contact: PO Box 207, Blackburn, Vic, 3130
61 3 9894 2116, info@gateways.edu.au

Website: www.gateways.edu.au

PRIMARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Maths and Science Centres of Excellence

Graham (Polly) Farmer Foundation

A programme for aspirant Indigenous students in Years 4 – 7 who demonstrate aptitude and interest in mathematics and science.

Some of the activities the students undertake include exploring Primary Connections Science activities and SciTech science kits; become members of the CSIRO Double Helix Club; and participate in engineering activities with engineers working in the local resources industry. In 2015, the Foundation supported these programmes in Wickham and Port Hedland.

The aim is to provide an interactive and engaging maths and science experiences designed to improve student learning outcomes, and in particular extend numeracy and science achievement levels.

Type: After school clubs and holiday programmes

Location: Western Australia

Age groups: Indigenous students in Year 4-7

Dates: Ongoing

Contact: 105 Banksia Street,
Tuart Hill WA 6060
08 9443 7260, pff@pff.com.au

Website: http://pff.com.au/programs/maths-and-science/

PRIMARY AND SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

AFTER SCHOOL CLUBS AND HOLIDAY PROGRAMMES

Gifted and Talented Education, Extension and Enrichment (G.A.T.E.WAYS)

G.A.T.E.W.A.Y.S. On Location programs take children out of the classroom and into different learning environments. Budding scientists can learn all about light and important research at the Synchrotron; filmmakers can produce a short film or animation at the Australian Centre For the Moving Image; young composers can work with the latest computer software at Art Centre Melbourne's Digital Hub; artistic students can develop their talents at the National Gallery of Victoria; animal lovers can enjoy programs at Werribee Open Range Zoo; keen young pilots can participate in programmes on flight at an airport; whilst those with a passion for history might join an urban historian out in the field to learn about historical research at first hand.

Type: After-school clubs and holiday programmes

Location: National

Age groups: Gifted and talented primary students

Dates: Ongoing, some terms are not STEM focused.

Contact: PO Box 207, Blackburn, Vic, 3130 61 3 9894 2116, info@gateways.edu.au

Website: www.gateways.edu.au

COMPETITIONS

International Competitions and Assessments for Schools

University of New South Wales

International Competitions and Assessments for Schools (ICAS) are independent skills-based assessments with a competition element. The assessments comprise eight digital technologies tests, eleven english tests, eleven maths tests, eleven science tests, five spelling tests and ten writing tests.

The assessments aim to enable the tracking of individual student performance and progress annually from Years 2 to 12.

Type: Competition

Location: National

Age groups: Primary and secondary students in Year 2-12

Dates: Annual

Contact: info@eaa.unsw.edu.au

Website: www.eaa.unsw.edu.au/icas/about

LittleBIGidea

Origin Energy

Origin's littleBIGidea competition lets any Australian student in Years 3 to 8 submit an idea that helps people in some way or makes life easier. The top twelve ideas - including the three overall winners - will be selected based on an exceptional demonstration of originality, creativity, practicality, imagination and innovation.

LittleBIGidea is part of Origin's Energy for Schools programme - a free, online education resource for teachers and students. The competition aims to foster creativity and innovation in students.

Type: Competition

Location: National

Age groups: Year 3-8 students

Dates: Annual

Website: www.littlebigidea.com.au/

The Australian Innovation Challenge

The Australian

Innovation awards helping drive some of the nation's best ideas to commercialisation or adoption. There are five professional categories plus a backyard category and the Young Innovators Award. This new category, which carries a AU$5000 prize, invites Australia's next generation of budding innovators and emerging talent to step forward. The scope of this category is open-ended, covering any inventions and novel initiatives with the potential to make a difference to our lifestyles, environment, work or play.

Type: Competition

Location: National

Age groups: The Young Innovators award is open to people under 21, either at school or in the early years of post-secondary education or training

Dates: Annual

Sponsors/Partners: Shell

Website: www.theaustralian.com.au/innovationchallenge

The Australian STEM Video Game Challenge

ACER Foundation

The Australian STEM Video Game Challenge invites upper-primary and secondary school students to design a video game and develop skills and engagement with science, technology, engineering and mathematics (STEM) areas while demonstrating creativity, problem solving and ingenuity through the design and development of a video game. The games will be played by industry professionals as part of the judging and the winners will be recognised at a national level, and by international bodies within the global gaming industry.

The competition aims to allow upper primary and secondary students to engage in learning about STEM in a fun and challenging way and to attract girls and students from disadvantaged backgrounds, as both groups are underrepresented in STEM studies and employment.

Type: Competition

Location: National

Age groups: Years 5-12 students with specific awards for girls and Indigenous students

Dates: April-August

Sponsors/Partners: ACER, PWC, Paaus, Unity, HP, Game Development Association of Australia, IGEA, Game Truck, Various universities

Website: www.stemgames.org.au/

IN-SCHOOL PROGRAMMES

3D online education

CSIRO and 3P Learning

3D online education provides STEM lessons in a 3D simulation of the real world. Using a personalised avatar, students embark on a journey from their own research lab. As they progress through quests, they explore the surrounding environment, complete inquiry-based learning tasks that test their core science skills, and gain rewards.

A unique feature of the new learning environments is the ability for students to transition smoothly between exploration of the virtual world and viewing high definition panoramic video from the exact same location in the real world.

The programme aims to make an online excursion a reality for many students who may never get the chance to visit actual sites.

Type: In-school programme

Location: National

Age groups: Primary and secondary students

Dates: Online

Sponsors/Partners: 3P Learning

Website: www.csiro.au/

CoreED

The Core

CoreEd programs support and extend the current school curriculum. It incorporates Information Communication Technology (ICT), digital technologies, entrepreneurial skills and the elements of STEAM (Science, Technology, Engineering, Arts and Maths); enabling students to create functional and aesthetically appealing solutions to real world problems, reinforcing skills across each of these areas and expanding their career options.

The aim of CoreEd is to engage and inspire students to collaborate, problem solve and create innovative solutions to real world challenges through a variety of digital literacy and entrepreneurship extra-curricular programmes.

Type: In-school programmes

Location: National

Target audience: Year K-9 students, parents, teachers

Dates: Varies to suit course.

Contact: Natalie McDonald, Director of Curriculum and Training, CoreEd Founding Partner,
0418 883 401,
www.RegisterYourSchool.com.au

Website: http://thecore.co/coreed

CREativity in Science and Technology (CREST) awards

CSIRO Education

CREativity in Science and Technology (CREST) is a non-competitive awards programme supporting students to design and carry out their own open-ended science investigation or technology project.

Type: In-school programme

Location: National

Age groups: Primary and secondary students

Dates: Ongoing

Contact: CSIRO Education, crest@csiro.au

Website: www.csiro.au/crest

CSIRO Indigenous STEM education programme

CSIRO Education

With the support of the BHP Billiton Foundation, this education programme is aimed at increasing participation and achievement of Aboriginal and Torres Strait Islander students in Science, Technology, Engineering and Mathematics (STEM).

There are six elements to the programme, which caters to the diversity of Aboriginal and Torres Strait Islander students as they progress through primary, secondary and tertiary education, and into employment.

Type: In-school programme

Location: National

Age groups: Primary and secondary students

Dates: 2014-2019

Sponsors/Partners: BHP Billiton

Contact: CSIRO Education and Outreach, education@csiro.au

Website: www.csiro.au/en/Education/Programs/Indigenous-STEM

National Science Week

Australian Government

Australia's annual celebration of science attracts more than 1.4 million people of all ages to over 1000 events across the length and breadth of the nation.

National Science Week aims to acknowledge the contributions of Australian scientists to the world of knowledge, to encourage an interest in science pursuits among the general public, and to encourage younger people to become fascinated by the world we live in.

Type: In-school programmes
Location: National
Age groups: Primary and secondary students
Dates: Annual, August
Sponsors/Partners: Inspiring Australia
Contact: National Science Week Team, Questacon, PO Box 5322, Kingston ACT 2604
scienceweek@industry.gov.au
02 6270 2880
Website: www.scienceweek.net.au/

Questacon virtual excursions

Questacon

Questacon offers engaging workshops and events, delivered via video conference to schools across Australia. Whether they are getting hands-on with the innovation process or connecting with scientists from across Australia, students can explore science, technology and innovation through real-time experience.

Questacon Virtual Excursions are available for schools and other education centres with H323 video conference equipment (or compatible).

The programme aims to have students trying and refining new ideas and expanding their lateral and logical thinking, without leaving the classroom.

Type: In-school programmes
Location: National
Age groups: Upper primary and secondary students
Dates: Annual, August
Contact: digitaloutreach@questacon.edu.au
Website: www.questacon.edu.au/outreach/programs/virtual-excursions

MENTORING, SCHOOL VISITS AND CAREERS

Scientists and Mathematicians in Schools and ICT in Schools

CSIRO Education

Scientists and Mathematicians in Schools (SMiS) and ICT in Schools are national programmes that create and support long-term partnerships between primary or secondary school teachers and STEM Professionals. Partnerships are flexible to allow for a style and level of involvement that suits each participant.

Type: Mentoring, school visits and careers
Location: National
Age groups: Primary and secondary students
Dates: 2015-2020
Sponsors/Partners: CISCO and more than 120 industry alliances
Contact: Scientists and Mathematicians in Schools, CSIRO Education and Outreach, scientistsinschools@csiro.au
Website: www.csiro.au/en/Education/Programs/SMiS

RESOURCES

Intel Skoool

Intel

Skoool is a collection of more than 140 interactive, online learning resources which focus on maths and science for primary and secondary students. These resources have been aligned to the Australian Curriculum for maths and science.

Skoool content includes simulations, lessons and tools and is presented in small, manageable learning chunks. Teachers can add their own commentary and lessons include checks for understanding.

Intel Skoool aims to provide a fun, motivational and inquiry-based STEM learning resource.

Type: Resources
Location: National
Target audience: Primary and secondary teachers
Dates: Ongoing, online
Website: www.intel.com.au/content/www/au/en/education/skoool.html

Science and Technology Education Leveraging Relevance (STELR) programme

Australian Academy of Technology and Engineering

STELR is a science teaching programme that is hands-on, inquiry-based, and in line with the Australian curriculum. It shows students that science and maths are relevant to their lives. STELR provides career profiles which highlight the study pathways necessary for jobs in STEM-related industries.

Currently, 450 schools in Australia and NZ participate, including 35 000 students and over 1000 teachers.

STELR aims to increase student enthusiasm for and engagement with STEM subjects.

Type: Resource
Location: National
Age groups: Primary (Year 6) and secondary (Years 7 to 10) students
Dates: 4-6 week modules
Sponsors/Partners: Orica (major), MMG, Australian Power Institute, Cigre, Cochlear, Cosmos, Rio Tinto, STILE, IBM
Contact: ATSE, Pennie Stoyles, pennie.stoyles@atse.org.au
Website: www.stelr.org.au

PRIMARY AND SECONDARY SCHOOL > STATE-SPECIFIC PROGRAMMES AND RESOURCES

EXCURSIONS

Ian Potter Foundation Technology Learning Centre

Questacon

The Ian Potter Foundation Technology Learning Centre (IPTLC) helps develop skills and an understanding of manufacturing processes by immersing school students in ideas, tools and creativity. Young people are encouraged to have a go at making things and be inspired to pursue careers in technology and engineering.

The IPTLC also has small public exhibition space that unpacks the narrative of the innovation and manufacturing process from concept to production and showcase items made in Australia. As a new facility for technology learning, the IPTLC will act as a hub for national educational activities in partnership with many different organisations.

The programme aims to stimulate an interest and awareness of the way things are made, shows how components fit together and demonstrates how innovation can solve everyday problems—from simple devices to higher end technology.

Type: Excursion

Location: Australian Capital Territory

Age groups: Primary and secondary students

Dates: Ongoing

Contact: info@questacon.edu.au

Website: www.questacon.edu.au/visiting/ian-potter

KIOSC Discovery Centre

Knox Innovation, Opportunity and Sustainability Centre, Swinburne University

The Knox Innovation, Opportunity and Sustainability Centre (KIOSC) aims to inspire and empower today's students to develop the skills, knowledge and behaviours which will equip them for their future careers.

Discovery programmes for students up to Year 10 focus on understanding the natural and built environment, innovation, technology and sustainability. The programs are inquiry-based and incorporate a wide range of activities and current technologies and scenarios.

The programmes are aligned to the Australian Curriculum, AusVELS, the Victorian Careers Curriculum Framework and the Sustainability Curriculum Framework.

Type: Excursion

Location: Victoria

Age groups: Primary and secondary students up to Year 10

Contact: KIOSC Trade Training Centre
Swinburne University of Technology
369 Stud Road, Wantirna, VIC 3152
03 9210 1285, kiosc@swin.edu.au

Website: www.kiosc.vic.edu.au/programs/discovery-programs/

INTEGRATED STEM AND MULTIDISCIPLINARY

Victoria's Specialist Science and Mathematics Centres

Victorian Department of Education and Training

Victoria's six Specialist Science and Mathematics Centres offer a unique insight into new technologies and research through onsite and outreach education programs for students of all ages and professional development activities for teachers.

The Centres' fun and innovative programmes aim to foster interest in the applications of science and mathematics and get students to consider the many career opportunities in these fields.

Programmes are only open to school group bookings and are linked to the Australian Curriculum and Victorian Essential Learning Standards (VELS).

The Centres are:

• BioLab at Belmont High School, Geelong, showcases the best in bioscience research and careers including medical, sport and health sciences, biotechnology, materials technology and biomechanics. Programmes are aimed at primary and middle school students, offering four VCE programs covering SAC content in biology, chemistry and physical education.

• EarthED opposite Mount Clear College, Ballarat, encourages exploration of geology and geomorphology, mining and engineering, chemistry, sustainable energy, paleontology, natural disasters and robotics.

• Ecolinc in Bacchus Marsh is an award-winning facility providing sustainable environmental programmes utilising technology, ecologically sustainable design elements and the natural resources of the surrounding area.

• Gene Technology Access Centre at University High School, Parkville, offers hands-on lessons in molecular and cell biology allowing students to work in small groups with young scientists at the laboratory bench.

• Quantum Victoria adjacent to La Trobe University, Macleod, presents interactive programmes including mini beasts, games technology, virtual reality, gesture-based computing, 3D printing, robotics and the physical sciences.

• Victorian Space Education Centre - at Strathmore Secondary College enables students to explore astronomy, astrophysics and all things space-related, including the ever-popular Mission to Mars programme.

Type: Excursion

Location: Victoria

Target audience: Primary and secondary student and teachers with a priority on low SES and rural or regional government schools

Website: www.education.vic.gov.au/about/events/Pages/edweek2015schools.aspx

IN-SCHOOL PROGRAMMES

Aboriginal Education Program

Scitech

Scitech's Indigenous Education Program (AEP) provides relevant and engaging science workshops and resources for Aboriginal students and their teachers. Scitech educators travel to remote locations to engage children in STEM education.

The programme has been developed with a cultural awareness of the peoples and landscapes of our regional and remote Indigenous communities. The resources follow the science component of the Australian Curriculum including strong links to numeracy and literacy. They cater to the learning style and needs of Indigenous students, whilst encouraging the involvement of the wider community.

Type: In-school programme

Location: Western Australia

Dates: Ongoing

Target audience: All school students in Western Australia's Indigenous and remote communities

Sponsors/Partners: WA Government, BHP Billiton, Chevron, Rio Tinto and Woodside

Contact: outreach@scitech.org.au

Website: www.scitech.org.au/

The programme is available to all school students, and the AEP touring schedule includes every remote Indigenous community school in Western Australia.

The Program aims to effect a measurable change in the level of engagement in science education among Indigenous school-children in remote Western Australian communities.

Advancing Education

Queensland Department of Education and Training

Queensland Government Department of Education and Training STEM education programmes include

• Fast-tracking the digital technologies curriculum including coding and robotics. The #codingcounts discussion paper has more information about coding and robotics.

• Establishing STEM virtual academies, including a specialist coding academy, to boost student engagement and promote innovation

• Incubating the next generation of IT entrepreneurs

A new STEM2 Travelling Lab, developed by Murrumba State Secondary College, will support improved outcomes in STEM for students across multiple schools.

The programme aims to develop the skills of young Queenslanders in STEM.

Type: In-school programmes

Location: Queensland

Dates: Ongoing

Age groups: Primary and secondary students

Contact: advancingeducation@dete.qld.gov.au

Website: http://advancingeducation.qld.gov.au/our-plan/Pages/default.aspx

AIS STEM Project

Association of Independent Schools (AIS) NSW

The AIS STEM Project motivates participation, enjoyment, engagement, and achievement in science, technology, engineering and mathematics.

Encouraging scientific enquiry, technological innovation, engineering ingenuity and mathematical rigour, a key feature is project-based learning, ensuring that contextual teaching and learning can happen with mindful and practical application from K to 12.

Type: In-school programme

Location: New South Wales

Dates: Various

Age groups: New South Wales independent schools, Years K to 12

Contact: Dr Megan Vazey, AIS STEM Consultant mvazey@aisnsw.edu.au, 02 9299 2845

Website: www.aisnsw.edu.au/Pages/default.aspx

NAMIG C2C: The C Program (Primary & Middle Years)

Northern Advanced Manufacturing Industry Group

The C Program provides opportunities for students to be introduced to advanced manufacturing through assistance with tours, talks, simple projects and linkage with a participating secondary school.

Short courses in some relevant skills are available through partnering tertiary institutions for Year 9 and 10 students of schools that are integrated C2C in higher year levels.

Type: In-school programme

Location: South Australia

Age groups: Primary and middle secondary students

Contact: info@concept2creation.com.au

Website: www.concept2creation.com.au

SMART (Science, Maths And Real Technology)

University of Newcastle, Faculty of Science and Information Technology

The Science, Maths and Real Technology (SMART) outreach programme offers live, interactive, demonstration based science shows to schools.

SMART aims to inspire, inform and involve young people with science.

Type: In-school programme

Location: New South Wales

Age groups: Primary and secondary students, Years K-12

Website: www.newcastle.edu.au/about-uon/governance-and-leadership/faculties-and-schools/faculty-of-science-and-information-technology/about-us/community-outreach/smart#SMART

UNIVERSITY ENRICHMENT

University of Western Australia (UWA)

UWA offers a range of programmes and activities to promote the understanding of science in the community.

Type: University enrichment
Location: Western Australia
Age groups: Primary and secondary students
Dates: Ongoing
Sponsors/Partners: Various
Website: www.uwa.edu.au/

• Faculty of Engineering offers engineering information evenings for prospective students

• Faculty of Architecture, Landscape and Visual Arts has an Annual Design Studio that introduces high school students to design at UWA over a week in the January school holidays.

• The ConocoPhillips Science Experience is a three-day workshop of hands-on science and activities for school students entering Years 9 and 10.

• National Science Week hosts events on campus during the third week in August each year.

• The Earth Science Museum provides a rich experience for visitors and valuable services to schools, including resource ideas and professional development days for teachers.

• I- CRAR is the International Centre for Radio Astronomy Research, bringing together researchers from Australia and the world to understand the universe at different wavelengths of light. ICRAR generates excitement for astronomy through public events and lectures, school programmes and resources for teachers.

• SPIRIT (SPICE-Physics-ICRAR Remote Internet Telescope) is an exciting new project developed specifically for students. SPIRIT allows schools to access the same tools used by researchers and astronomers to observe and collect astronomical data.

• Aspire UWA works with 52 partner schools to raise aspirations among high school students in communities typically under-represented in higher education.

Community Engagement Through STEM Education

University of Tasmania

Programmes engage Tasmanian communities in exciting learning experiences in the fields of science, technology, engineering and mathematics through research-informed and classroom-tested practices and resources.

All programmes are closely linked to the new Australian Curricula in mathematics, science and the design and technology curriculum.

The programmes aim to bring about real and permanent improvements to the ways Tasmanians experience the STEM fields.

Type: University enrichment
Location: Tasmania
Age groups: Primary and secondary students
Dates: Ongoing
Contact: Mrs Susie Haley, 61 3 6226 7868
susie.haley@utas.edu.au
Website: www.utas.edu.au/stem/about

The Wonder of Science

University of Queensland Diamantina Institute

The Wonder of Science is a Science, Technology, Engineering, and Maths (STEM) education programme that provides authentic science inquiry opportunities for regional, rural and Indigenous Queensland students.

The programme includes investigative science projects, visits to schools by university students serving as Young Science Ambassadors, and support for teachers.

Type: University enrichment
Location: Queensland
Target audience: Regional, rural and Indigenous Queensland students in Year 5-9
Dates: Ongoing
Sponsors/Partners: University of Queensland Australian Academy of Technology and Engineering, Arrow Energy, Bechtel, CQU, JCU, Jelinbah Group, Australia Pacific LNG, QIC, QGC, QUT, Rio Tinto, Santos, US, and Commonwealth Department of Education
Contact: University of Queensland, Diamantina Institute
Robyn Bull, robyn.bull@uq.edu.au,
61 7 3443 7981 or 0410 265 404
Website: www.wonderofscience.com.au/

STEM Teacher Enrichment Academy

University of Sydney

The STEM Teacher Enrichment Academy brings together expertise from the University of Sydney's faculties of Education and Social Work, Science, and Engineering and Information Technologies to help build STEM capacity through teacher enrichment and professional development.

The Academy's multi-day programme provides teachers with knowledge, skills and support to make real change in the classroom teaching of STEM subjects.

The Academy offers three development programmes based around the core disciplines of science, mathematics and engineering and technology.

Type: University enrichment
Location: New South Wales
Dates: Ongoing
Target audience: Primary and secondary teachers
Contact: stem.academy@sydney.edu.au
Website: http://sydney.edu.au/stem/academy/

SECONDARY SCHOOL > INTERNATIONAL PROGRAMMES AND RESOURCES

RESOURCES

SMART

Rio Tinto

SMART is a free international education portal from Rio Tinto.

Using a combination of interactive whiteboard presentations, printable lesson plans, worksheets and case studies, students explore how their academic studies relate to real-world operations in a major global business.

The teachers' centre contains full support for each lesson, including presentation notes, lesson plans, worksheets and case study materials.

SMART aims to support classroom teaching and learning in maths, science and business studies for young people aged 12-16.

Type: Resources
Location: International
Target audience: Students aged 12-16 and teachers
Dates: Ongoing, online
Contact: smart@riotinto.com
Website: www.smart.riotinto.com/teacherscentre.php

SECONDARY SCHOOL > NATIONAL PROGRAMMES AND RESOURCES

COMPETITIONS

BHP Billiton Science and Engineering Awards

CSIRO Education

The BHP Billiton Science and Engineering Awards are Australia's most prestigious school science awards. The Awards reward young people who have undertaken practical research projects, which demonstrate innovative approaches and thorough scientific procedures. There is also a teacher's award each year. CSIRO manages the Awards which BHP Billiton has sponsored since 1981. The Science Teacher Associations in each state are part of the partnership promoting and running state-based competitions to determine the national finalists in the Awards and nominating teachers for the teacher award.

Type: Competition
Location: National
Age groups: Secondary students
Dates: Annual
Sponsors/Partners: BHP Billiton, Intel, Australian Science Teacher Association
Contact: bhpbsea@csiro.au
Website: www.scienceawards.org.au/

FutuRide

Siemens

Siemens and Cadel Evans want to make science and technology more fun by giving away $100 000 worth of unique, FutuRide power-generating bikes to secondary schools across Australia.

18 winning schools will receive a set of four FutuRide power-generating bikes valued at over $4000, while one overall winner will also receive a visit to their school from Cadel Evans.

FutuRide is open to any student attending a private or public secondary school in any Australian state or territory in 2015.

FutuRide aims to highlight the importance of STEM education and the future of engineering in Australia.

Type: Competition
Location: National
Age groups: Secondary students
Dates: The inaugural competition was held in 2015
Sponsors/Partners: Siemens, AAMC, DHL, Engineers Australia
Website: www.futuride.com.au/

Science & Engineering Challenge

University of Newcastle

The Science and Engineering Challenge is a nationwide STEM outreach programme presented by the University of Newcastle in partnership with communities, Rotary clubs, universities and sponsors. Through the Challenge, students experience aspects of science and engineering which they would not usually see in their school environment. Includes teacher resources.

The competition aims to inspire students in Year 10 to consider a future career in science and engineering by choosing to study the enabling sciences and mathematics in Years 11 and 12.

Type: Competition
Location: National
Age groups: Year 10 students
Sponsors/Partners: Rotary, Engineers Australia. various local groups
Contact: challenge@newcastle.edu.au
Website: www.newcastle.edu.au/about-uon/governance-and-leadership/faculties-and-schools/faculty-of-engineering-and-built-environment/science-and-engineering-challenge

The Statistical Society of Australia Inc (SSAI) National Secondary Schools Poster Competition

University of Newcastle, Faculty of Science and Information Technology

The National Secondary Schools Poster Competition, supported by the University of Newcastle, is an annual competition encouraging secondary school students to develop, implement and creatively report upon an investigation on a topic of interest to them.

The competition is open to Years 7-8, 9-10 and 11-12, and is a wonderful opportunity to encourage team work, critical thinking and creativity, and also increase awareness of the value and need of data.

Type: Competition
Location: National
Age groups: Secondary students
Dates: Annual
Sponsors/Partners: Statistical Society of Australia Inc.
Contact: Peter.Howley@newcastle.edu.au
Website: www.newcastle.edu.au/about-uon/governance-and-leadership/faculties-and-schools/faculty-of-science-and-information-technology/about-us/community-outreach/national-secondary-schools-poster-competition
www.ssaipostercomp.info/

IN-SCHOOL PROGRAMMES

iSTEM

iSTEM

The iSTEM (Invigorating Science Technology Engineering and Mathematics) programme gives high school students interested in science a chance to meet other like-minded students and to participate in enrichment activities not normally available through school programs.

Activities include visits to museums, universities and the US Space Academy Programme.

Type: In-school programme
Location: National
Age groups: Year 9-10 students
Sponsors/Partners: NAB, LAZSTA
Website: www.istem.com.au

SUBS in Schools™

Re-Engineering Australia (REA) Foundation Ltd.

REA in association with the Defence Materiel Organisation (DMO) and a number of industry stakeholders developed the programme.

SUBS in Schools is structured on the same underlying fundamentals (pedagogy) successfully employed in the F1 in Schools™ (F1iS) programme.

In 2016 SUBS in Schools will be expanding to include 20 additional schools from across Australia and is the most technically complex student STEM project in the world today.

It aims to engage student interest in the technology of submersible vehicles and submarines through project-based learning.

Type: In-school programme
Location: National
Age groups: Secondary students
Dates: Annual
Sponsors/Partners: Australian Government Department of Defence, Babcock, SAAB Australia, ASC, AMC, EnVizage
Contact: Re-Engineering Australia Foundation Ltd., contact@rea.org.au
Website: www.rea.org.au

The Inspiring Science & Mathematics Education (ISME) Project

The Australian Academy of Technology and Engineering

The Inspiring Science & Mathematics Education (ISME) Project is a collaboration between Southern Cross University, the University of Wollongong, Charles Darwin University and the Australian Academy of Technology and Engineering (ATSE).

Inspiring Science & Mathematics Education (ISME) involves the development of at least five authentic, multidisciplinary classroom modules. All modules will:

1. be aligned with the Australian Curriculum;

2. be modelled on ATSE's STELR programme that is currently being used in nearly 400 schools across Australia;

3. be taught within the school curriculum so that all students, not just the science 'whiz kids', will develop their science literacy and life-long active learning skills; and

4. be written with the inexperienced teacher, or the teacher teaching out of field, in mind.

ISME modules will be delivered through a web-based platform. The modules will involve hands-on, inquiry-based science and mathematics activities supported by background information and career profiles of recent graduates working in the relevant industries.

Type: In-school programme
Location: National
Age groups: Year 7-10 students
Dates: Ongoing
Contact: Level 1 / 1 Bowen Crescent, Melbourne, Victoria, 3001
Direct +613 9864 0910
General +613 9864 0900
Website: www.stelr.org.au

Worlds of Work

Foundation for Young Australians (FYA)

Worlds of Work (WoW), delivered by teachers in the classroom, links student learning with real-world experiences.

The WoW programme helps young people understand the real world of work and explore their own interests at a crucial time – early secondary school. It builds confidence and capability as well as connection to current info on local labour markets.

WoW also provides tools for schools to hook up with local businesses so that young people can have real-life careers conversations throughout the programme.

WoW has been mapped to the AusVELS curriculum.

The programme aims to connect students with the world of work by providing activities that facilitate meaningful and appropriate careers exploration.

Type: In-school programme

Location: National

Age groups: Year 7-9 students

Dates: Ongoing

Sponsors/Partners: Shell

Contact: Foundation for Young Australians
21-27 Somerset Place, Melbourne Victoria 3000,
03 9670 5436

Website: www.fya.org.au/

MENTORING, SCHOOL VISITS AND CAREERS

Curious Minds: Girls in science, technology, engineering and mathematics

Australian Mathematics Trust and Australian Science Innovations

Curious Minds is a hands-on extension and mentoring programme to ignite girls' passion in science, technology, engineering and mathematics

A six-month programme that combines two residential camps and a mentoring programme.

The camps will enable the girls to explore all aspects of science, technology, engineering and mathematics through guest lectures, interactive sessions, practicals and field trips.

Type: Mentoring, school visits and careers

Location: National

Target audience: Secondary, Years 8-10, female students - particularly targeted towards girls from under-represented groups such as disadvantaged, rural/remote and Indigenous students

Dates: 6 month programme

Sponsors/Partners: Australian Government Department of Education and Training through the Restoring the Focus on STEM programme (initiative), the Department of the Prime Minister and Cabinet, Australian National University, PWC

Contact: vanessa.kates@asi.edu.au

Website: www.amt.edu.au/information/curious-minds-girls-in-science-technology-engineering-and-mathematics/

InRoads

Australian Business and Community Network

InRoads is a workforce preparation and mentorship programme. It supports students aged 16 and 17 years from low socio economic status (SES) schools in areas where youth unemployment is highest with employability skills and pathways to employment in the areas of Science, Technology, Engineering and Mathematics (STEM).

Type: Mentoring, school visits and careers

Location: National

Target audience: Students aged 16-17, low SES

Dates: Ongoing

Sponsors/Partners: JP Morgan

Contact: ABCN Head Office
Level 3, 141 York Street, Sydney
02 8988 6850

Website: www.abcn.com.au/

Real Futures Generation

Beacon Foundation

Real Futures Generation is a place-based, community driven work readiness programme. The programme introduces wide-ranging industry and career options to students living in low socio-economic status communities while also developing their pre-employment capacity and work readiness skills.

Students are invited to learn about job opportunities in interactive classroom sessions or in the workplace environment and those who develop an interest in the job opportunities are then given the support needed to secure it. Students gain insight into a real job via a site visit, a classroom visit from a person in industry, or work experience.

Type: Mentoring, school visits and careers

Location: National

Age groups: Secondary students, particularly those living in low SES communities

Dates: Ongoing

Sponsors/Partners: JP Morgan

Contact: Beacon Foundation Head Office, Level 1, 40 Molle Street, Hobart, Tasmania 7000
03 6234 4155

Website: https://beaconfoundation.com.au/

Technology, Enterprise and Mathematics

Australian Business and Community Network (ABCN)

Technology, Enterprise and Mathematics (TEAM) is a mentoring programme for year 10 students from low socio-economic status schools. Teachers and students travel to a corporate venture and attend four three-hour workshops. Students work with their mentors in small teams to create a business project proposal, which is presented in the final session.

The programme aims to stimulate an interest in technology and maths and to provide students with meaningful skills they need to gain relevant employment.

Type: Mentoring, school visits and careers

Location: National

Target audience: Year 10 students, particularly those living in low SES communities

Dates: Ongoing

Contact: ABCN Head Office Level 3, 141 York Street, Sydney
02 8988 6850

Website: www.abcn.com.au/

OUT OF SCHOOL PROGRAMMES

Science 50:50 Inspiring Young Women into Science Degrees and Careers

University of New South Wales

Science 50:50 is a programme that aims to inspire Australian girls and young women to pursue degrees and careers in science and technology through:

- internship opportunities;
- the Science 50:50 New Innovators Competition;
- the Science 50:50 STEM video series;
- an interactive web portal.

The programme aims to inspire Australian girls and young women to pursue degrees and careers in science and technology so they can succeed in an innovation-driven future.

Type: Out of school programme

Location: National

Age groups: Female secondary students

Dates: Ongoing

Sponsors/Partners: National Youth Science Forum, Australian National Maritime Museum, IBM, CSIRO, Australian Museum, Woolworths, Cochlear, AIPS Tall Poppy campaign, Arrium, Global Product Stewardship Council, Brickworks, Australian Research Council, UNSW Innovations, aarnet, google

Website: www.science.unsw.edu.au/50-50

SECONDARY SCHOOL
> STATE-SPECIFIC PROGRAMMES AND RESOURCES

COMPETITIONS

High School Competitions

University of Wollongong

The Faculty of Engineering & Information Sciences at the University of Wollongong organises various competitions:

- NSW Engineering Studies Competition Year 11-12
- NSW Design & Technology Competition Year 11-12
- NSW Industrial Technology Competition Year 11-12
- NSW Industrial Technology Competition Year 9-10
- ACT STEM Competition Year 11-12
- NSW & ACT Maths Via Digital Media Competition Year 7-12.

Type: Competitions

Location: New South Wales and Australian Capital Territory

Age groups: Year 9-12 students

Sponsors/Partners: Various

Contact: Lyndal Worsfold, Projects Officer, High School Competitions Faculty of Engineering, University of Wollongong, lyndalw@uow.edu.au

Website: http://eis.uow.edu.au/high-school-competitions/index.html

The Amazing Spaghetti Machine Contest

University of Melbourne

Year 10 students put their science, engineering and mathematics skills to the test in this annual contest, where they are challenged to create an elaborate machine that accomplishes a simple task.

Type: Competition

Location: Victoria

Age groups: Year 10 students

Dates: Annual, March

Contact: spaghettimachine-eng@unimelb.edu.au

Website: http://spaghetti-machine.eng.unimelb.edu.au/australia/

EXCURSIONS

Queensland University of Technology High School workshops

Queensland University of Technology (QUT)

QUT's High School workshops are tailored to enhance and support the national curriculum's science and mathematics syllabus through practical application. Most workshops are held within the Science and Engineering Centre at Gardens Point campus and are free of charge for high school groups.

Students will engage in:

- critical thinking and problem solving;
- collaborate with STEM experts;
- develop relevant, current skills and STEM literacy;
- be inspired through real-world experiences.

Visits can also include an additional 30-minute interactive experience at The Cube.

The workshops aim to enhance and support the national curriculum's science and mathematics syllabus through practical application.

Type: Excursions

Location: Queensland

Age groups: Secondary students

Dates: Ongoing

Contact: stem.schools@qut.edu.au

Website: www.qut.edu.au/study/undergraduate-study/do-you-advise-school-students/stem-for-schools/high-school-workshops

IN-SCHOOL PROGRAMMES

Advanced Manufacturing Industry Schools Pathway Program (ME Program)

Regional Development Australia (RDA) Hunter

A school programme tailored to students from years 9-12. Schools provide core subjects like mathematics, english, science, information and communication technology and engineering studies to provide the foundations for pursuing a career in manufacturing with is a focus on defence.

School based learning is combined with on the job experience and additional education, delivered by a range of Australia's leading manufacturers. There is close consultation with education and industry stakeholders.

The workshops aim to enhance and support the national curriculum's science and mathematics syllabus through practical application.

Type: In-school programme

Location: Hunter, New South Wales

Age groups: Year 9-12 students

Sponsors/Partners: Australian Government Department of Defence, Westrac, BAeSystems, Forgacs, AMP Control, Industry partners

Contact: Scott Sleap, ME Program Manager, RDA Hunter, 02 4908 7300

Website: www.meprogram.com.au

Kwinana Industries Council Educational Development Program

Kwinana Industries

The programme consists of workshops, presentations, industry excursions and mock interviews. It includes traineeships and work placements.

The programme aims to expose high school students in the region to the sorts of careers that are available in industry, and work with them in a practical sense on how they might aspire to those careers.

Type: In-school programme

Location: Western Australia

Age groups: Year 9 and 10 students from 17 participating schools per year

Dates: Ongoing, programme is 2 days per week for 3 weeks

Contact: admin@kic.org.au

Website: www.kic.org.au/education.html

NAMIG C2C (Concept 2 Creation) Programs

Northern Advanced Manufacturing Industry Group

Northern Advanced Manufacturing Industy Group is a consortium of local industries, government and education providers introduce advanced manufacturing pathways to students.

Through a suite of programmes and activities, C2C introduces a "product life cycle" approach to science, maths and technology education, helping schools and students to develop the knowledge, understanding and appreciation of advanced manufacturing processes and possibilities through a problem based learning approach.

Students and industry work together to solve a problem. About 17 schools in South Australia participate.

The programme includes Engineers Without Borders in Schools, C2C Auto Challenges, Power & Sustainability and Model Aircraft Design.

The programme aims to develop the knowledge, understanding and appreciation of advanced manufacturing processes and possibilities through a problem based learning approach.

Type: In-school programme

Location: South Australia

Age groups: Year 8-12 students

Sponsors/Partners: South Australian Government, BAE Systems Australia, Schneider Electric, GM Holden, SA Power Networks, Coles Distribution, Flight Training Adelaide, Futuris Automotive, Les Brazier Special Vehicles, Mincham Aviation, RAAF, Sage Automation, Tindo Solar

Contact: info@concept2creation.com.au

Website: www.concept2creation.com.au

Powering Careers in Energy

Chevron

Powering Careers in Energy is the only industry-developed schools-based programme that has been approved by the Western Australian School Curriculum and Standards Authority for use in Western Australian schools.

The one-year course covers five study areas and accounts for the equivalent of two units towards the Western Australian Certificate of Education (WACE) graduation upon completion of the course.

A residential camp allows students to complete unit five of the programme by demonstrating skills and knowledge acquired during the first four units.

Students gain hands-on experience and apply knowledge and skills learned through the programme to practical science, technology, engineering and math activities. Chevron provides participating schools with relevant resources.

The course aims to increase energy literacy in schools and improve students' skills and training outcomes.

Type: In-school programme

Location: Western Australia

Age groups: Year 10-12 students

Dates: Ongoing; 1-year course

Contact: Chevron Australia Pty Ltd
QV1 Building, 250 St. Georges Terrace,
Perth, WA 6000
+61 9216 4000,
www.chevronaustralia.com/contact/email-chevron

Website: www.chevronaustralia.com/community/education-partnerships/powering-careers-in-energy

Queensland Minerals and Energy Academy

The Queensland Minerals and Energy Academy (QMEA) is Australia's largest and most successful industry/education schools partnership between the Queensland resources sector represented by the Queensland Resources Council and the Queensland state government.

Through its school-industry partnerships the QMEA offers a range of programmes and experiences to broaden students' and teachers' knowledge of the sector and provide pathways for young people into resource sector related careers. Activities include a virtual academy of 34 Queensland schools and a professional development programme for teachers.

The QMEA aims to assist students with their understanding of, and exposure to, the resources sector and related career paths.

Type: In-school programme

Location: Queensland

Age groups: Secondary students

Sponsors/Partners: AngloAmerica, BMA, BHP Billiton, Mitsubishi, Alliance, Rio Tinto, Glencore, Stanwell, Origin, QGC, Santos, Jellinbah Resources, Wesfarmers Resources, Veolia.

In-kind support: Civeo, Thiess, Rio Tinto Coal Australia, Rio Tinto Alcan, Sibelco, McCoskers Civil Construction, Bechtel and many more.

Contact: Dan Rea, STEM Outreach Officer, danr@qmea.org.au

Website: www.qmea.org.au/

South Australian STEM Specialist Schools

South Australia Department for Education and Child Development

South Australian STEM Specialist Schools include:
- Le Fevre Maritime High School
- Seaview High School – Advanced Manufacturing Programs
- The Heights School – Defence Industry Programs
- Hamilton Secondary College – STEM Programs

DECD STEM Focus Schools:
- Parafield Gardens High School
- Roma Mitchell Secondary College
- Salisbury East High School
- Unley High School

Type: In-school programme

Location: South Australia

Age groups: Secondary students

Dates: Ongoing

Website: www.decd.sa.gov.au

The Advanced Technology Industry School Pathways Program (ATP)

South Australia Department for Education and Child Development

The Advanced Technology Industry School Pathways Program is an initiative funded by the Australian Government Department of Defence.

The programme aims to increase the numbers of students studying science, mathematics and technology while at school and post school. The increase in professional and vocational pathways will provide greater workforce capacity for industries which support the growing defence industries in South Australia.

There are nineteen schools involved in this programme.

Type: In-school programme

Location: South Australia

Age groups: Year 8-12 students

Dates: Ongoing to June 2016

Sponsors/Partners: Australian Government Department of Defence, Lockheed Martin, Raytheon, Levett Engineering, Codan, General Dynamics, GE, BAeSystems, Broens, Hendon Semi-Conductors, Redarc, SAGE Automation and others

Contact: South Australian Department for Education and Child Development, pam.gerrard@sa.gov.au

Women in Future Leadership

Chevron

Women in Future Leadership identifies high-performing female students and provides them with an introduction to the oil and gas industry through work experience, personal professional branding workshops and mentorship. The programme currently accommodates more than 30 students annually.

The programme aims to help increase the representation of women in the oil and gas industry by introducing young female students to the range of career opportunities available.

Type: In-school programme
Location: Western Australia
Age groups: Female secondary students
Dates: Ongoing
Contact: Chevron Australia Pty Ltd
QV1 Building, 250 St. Georges Terrace, Perth, WA 6000
+61 (8) 9216 4000, www.chevronaustralia.com/contact/email-chevron
Website: www.chevronaustralia.com/community/education-partnerships/women-in-future-leadership

MENTORING, SCHOOL VISITS AND CAREERS

Balancing the Equation

University of New England

Balancing the Equation is a mentoring programme that targets first-year female on-campus and distance students enrolled in Science, Technology, Engineering and Mathematics, as they make the transition to higher education.

The programme will also involve senior secondary students through participation in the forums, thereby having a positive flow-on effect to female secondary students who may be contemplating studies and careers in STEM.

Type: Mentoring, school visits and careers
Location: New South Wales
Age groups: Female students in Year 11-12
Contact: Nansiri Iamsuk
WSTEM Project Coordinator
61 2 6773 5269, wstem@une.edu.au
Website: www.une.edu.au/about-une/academic-schools/school-of-education/stem

Beyond the Beaker

Scitech

The programme delivers inspirational presentations to high school students across Western Australia.

The programme aims to encourage high school students to study STEM subjects, boosting science literacy in WA.

Type: Mentoring, school visits and careers
Location: Western Australia
Age groups: Year 7-10 students
Dates: Ongoing
Sponsors/Partners: Chevron
Contact: outreach@scitech.org.au
Website: www.scitech.org.au/

University of Western Australia Community Outreach

University of Western Australia, Faculty of Engineering, Computing and Mathematics

The Faculty of Engineering, Computing and Mathematics offers various programmes for secondary school students and the wider community.

These include:
• School visits covering important topics such as course information, admission requirements, scholarships and career prospects
• Engineering information evenings for prospective students
• Girls in Engineering programme.

Type: Mentoring, school visits and careers
Location: Western Australia
Age groups: Secondary students
Dates: Ongoing
Website: www.ecm.uwa.edu.au/community

RESIDENTIAL PROGRAMMES

CSIRO Indigenous STEM education programme: Aboriginal Summer School for Excellence in Technology and Science (ASSETS)

CSIRO Education

Aboriginal Summer School for Excellence in Technology and Science (ASSETS) is a nine-day camp for high-achieving Indigenous Year 10 students with an ongoing leadership and support programme to nurture students through Years 11 and 12.

ASSETS summer schools will be running in Adelaide, Newcastle and Townsville in December 2015 and January 2016. Applications have now closed and students have been selected for each location.

Type: Residential programme
Location: South Australia, New South Wales and Queensland
Age groups: Year 10 Indigenous students
Dates: Annual, December-January
Sponsors/Partners: BHP Billiton
Contact: CSIRO Education and Outreach, education@csiro.au
Website: www.csiro.au/en/Education/Programs/Indigenous-STEM

Vice-Chancellor's STEM camp

Queensland University of Technology (QUT)

The inaugural QUT Vice-Chancellor's STEM camp for 160 of Queensland's top performing Year 11 science and maths students took place at QUT's STEM facilities at the Science and Engineering Centre, including The Cube in 2015.

The camp is fully funded by QUT. There is no cost for students to attend and it is open to all high-achieving Queensland Year 11 students.

The programme aims to gives students a taste of the STEM disciplines by engaging in a hands-on, intensive exploration of a project in their chosen discipline: addressing environmental issues; solving problems in the energy, food and medical sectors; improving information dissemination and security.

Type: Residential programme
Location: Queensland
Age groups: Year 11 students
Dates: Annual
Contact: stem.schools@qut.edu.au
Website: www.qut.edu.au/study/undergraduate-study/do-you-advise-school-students/stem-for-schools/vice-chancellors-stem-regional-camp

UNIVERSITY ENRICHMENT

Flinders University, Faculty of Science and Engineering

The Faculty of Science and Engineering offers various events based around a key theme each term. Students can explore the different fields of science through interactive workshops.

Flinders staff may also visit classrooms or attend information evenings to talk about course options and all things science and engineering (suitable for Years 11 and 12 and subject to staff availability), information technology, computer science and mathematics; as well as careers and pathways presentations.

The programme aims to get students excited about science and mathematics, while providing an opportunity for students to experience learning in a university setting.

Type: University enrichment
Location: South Australia
Dates: Ongoing
Age groups: Year 11 and 12 students
Contact: silc@flinders.edu.au
Website: www.flinders.edu.au/science_engineering/

Gippsland Access and Participation (GAP)

Federation University

The GAP project focuses on two main areas:

- Connecting teachers in regional and remote areas: Recognising the difficulties teachers in regional and rural areas often face, we support maths and science teachers in isolated areas of Gippsland with local networking and professional development activities
- Addressing the decline in maths and science: By making learning fun, interesting and engaging, the GAP project is working to reverse the decline in the numbers of students studying maths and science at secondary school in Gippsland.

Type: University enrichment
Location: Victoria
Target audience: Secondary students and teachers
Contact: gapproject@federation.edu.au
Website: www.federation.edu.au/gap

STEM for Schools

Federation University

The Faculty of Science and Technology has a long history of student and community engagement. While we have been actively involved in various science and engineering programs for many years we are now also developing a strong IT-focused engagement strategy.

We encourage any organisations or schools who are interested in participating to contact our faculty. Current programs:

- National Science Week
- The Science Experience
- Regional Schools Outreach Program
- On-campus School visits
- IT in Schools
- Robogals
- GiG - Get into Games - Expo

Type: University enrichment
Location: Victoria
Age groups: Secondary students
Dates: Various
Contact: Stephanie Davison s.davison@federation.edu.au
Website: http://federation.edu.au/faculties-and-schools/faculty-of-science-and-technology/community-engagement/stem-for-schools

Uni Bridges

La Trobe University

The Uni Bridges programme is designed to give students an enriched learning experience by developing aspects of the Year 10 to 12 curriculum. Uni Bridges students participate in outreach activities, workshops and projects developed around the central theme of preventing and curing disease.

Students have access to industry experts and interact with students from other Uni Bridges schools. A digital learning platform enables students to share their work and experiences with students from other partner schools.

The programme provides a pathway into tertiary studies in the science, technology, engineering and mathematics disciplines.

Type: University enrichment
Location: Victoria
Age groups: Year 10-12 students
Dates: Ongoing
Sponsors/Partners: Koorie Academy of Excellence, Quantum Victoria, the Department of Education and Early Childhood Development, the Victorian Curriculum and Assessment Authority.
Contact: Jacqueline Borg Project Advisor – Uni Bridges, La Trobe University
03 9479 5978, jacqui.borg@latrobe.edu.au
Francesca Calati, Outreach Programs Manager La Trobe University
03 9479 6011, f.calati@latrobe.edu.au
Website: www.latrobe.edu.au/outreach/uni-bridges

UniSA Connect

University of South Australia

UniSA Connect focuses on inspiring science, technology, engineering and mathematics (STEM) study and career awareness with secondary school students. The suite of UniSA Connect programmes aim to promote further student STEM study and educational attainment.

UniSA Connect utilises academic expertise to identify current STEM ideas to develop interactive programs for secondary school students. Scenario based problem solving is used as a key approach in the programmes, with authentic learning links for secondary school students.

All programmes are supported by the University of South Australia and are offered free of charge for students (unless otherwise advised).

Type: University enrichment

Location: South Australia

Age groups: Years 10-12 STEM and individual subject area students

Dates: Ongoing

Contact: UniSA Connect
08 8302 5243
Deb Turley, Manager – UniSA Connect Programs, DebTurley@unisa.edu.au

Website: www.unisa.edu.au/Study-at-UniSA/UniSA-College/UniSA-Connect/

Young Women in Technology Experience

University of Adelaide

This one-day event introduces female students in Years 9 and 10 to technology-related future study options in engineering, and computer and mathematical sciences.

The interactive one-day programme includes information sessions, presentations and hands-on activity challenges. There will be activities and talks from a range of women currently studying or working.

The programme aims to celebrate diversity across engineering, computer and mathematical sciences and introduce female students in Years 9 and 10 to technology-related career paths.

Type: University enrichment

Location: South Australia

Age groups: Female students in Years 9-10

Dates: Annual, June

Contact: 61 8 8313 4148
enquiries_ecms@adelaide.edu.au

Website: www.ecms.adelaide.edu.au/

PRIMARY SCHOOL >NATIONAL PROGRAMMES

IN-SCHOOL PROGRAMMES AND AFTER SCHOOL PROGRAMMES

Club Kidpreneur

Club Kidpreneur Foundation

Club Kidpreneur runs programs in primary schools (aligned with the Australian Curriculum) and in the community (holiday camps and after-school programs) to develop financial literacy, business acumen and a range of personal life skills. Programs include Ready-Set-Go, Camp Kidpreneur and the Club Kidpreneur $50 challenge.

Type: In-school programmes and After school clubs and holiday programmes

Location: National

Age groups: Primary school children

Dates: Ongoing

Contact: Lydia Scott, 1300 464 388
info@clubkidpreneur.com

Website: www.clubkidpreneur.com/

SECONDARY SCHOOL > NATIONAL PROGRAMMES

COMPETITIONS

Young Social Pioneers program

Foundation for Young Australians

The Young Social Pioneers program is an intensive six-month initiative that backs emerging social entrepreneurs to lead sustainable and impactful social ventures. It has helped incubate, consolidate and scale more than 130 social ventures.

It includes an "Innovation through STEM" stream sponsored by PwC. In 2016, the STEM stream of Young Social Pioneers will also be part of PwC's 21st Century Minds (21CM) Accelerator program.

Pioneers will be part of the Foundation for Young Australian's intensive social venture incubator (participating in three touch points in May, July and September) as well as PwC's 11-month accelerator. Pioneers will stand a chance to secure up to $500,000 in cash and services from PwC.

Type: Competition

Location: National

Audience: Young STEM entrepreneurs

Dates: Ongoing

Sponsors/Partners: PwC

Contact: entrepreneurs@fya.org.au

Website: www.fya.org.au/our-programs/young-social-pioneers/

ENTREPRENEURIAL SKILLS

IN-SCHOOL PROGRAMMES

Yo$20 Boss

Foundation for Young Australians

Yo$20 Boss is an in-school challenge, run by teachers, which provides your students $20 of start-up money to create their own business. At the end of the program, students are encouraged to pay back the start-up money, with a $1 legacy payment.

Type: In-school programme
Location: National
Age range: Secondary students
Dates: Annual, ongoing
Sponsors/Partners: National Australia Bank
Contact: Foundation for Young Australians
21-27 Somerset Place
Melbourne Victoria 3000
03 9670 5436, 20boss@fya.org.au
Website: http://20boss.fya.org.au/

SECONDARY SCHOOL . STATE-SPECIFIC PROGRAMMES

IN-SCHOOL PROGRAMMES

ECOMAN

Queensland Private Enterprise Centre (QPEC)

ECOMAN is an international business simulation programme, implemented in secondary schools and colleges across Australia to familiarise students with the world of business. The programme is delivered by Queensland Private Enterprise Centre (QPEC), a not-for-profit organisation.

Students are formed into three competing companies with each student taking a position such as Managing Director, Chief Financial Officer, Production Manager, Human Resources Manager and Marketing Manager. Under the guidance of experienced, QPEC-accredited facilitators, students run their respective companies for a notional four years within a computer-based simulation. The students are effectively responsible for the growth and profitability of competing companies.

The programme aims to inform and educate teachers and young people about the central role and contribution of enterprise in our society.

Type: In-school programme
Location: Queensland
Age group: Senior secondary students
Duration: 3 days
Sponsors/Partners: Cement Australia
Contact: Queensland Private Enterprise Centre,
Griffith Business School
Griffith University
170 Kessels Road
NATHAN, QLD 4101
07 3735 4379, qpec-group@griffith.edu.au
Website: http://qpec.org.au/ http://qpec.org.au/

COMPANIES – WHAT ARE THEY SUPPORTING?

Company	Programme	Host organisation
AAMC	FutuRide	Siemens
Aarnet	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
ACS Foundation	Digital Careers	ACS Foundation
	National ICT Careers Week (NICTCW)	ACS Foundation
	The Big Day In	ACS Foundation
	Youth Festival of ICT - YITCON	Australian Computer Society (ACS)
	National ICT Careers Week (NICTCW)	ACS Foundation
Adobe	The Big Day In	ACS Foundation
Aerospace Concepts	Victorian Space Education Centre	Strathmore Secondary College
Agilent Technologies	Victorian Space Education Centre	Strathmore Secondary College
AIIA	Digital Careers	
	National ICT Careers Week (NICTCW)	ACS Foundation
AIPS	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
Alinta Energy	Microscopes in Schools	Rotary Club of Freshwater Bay, Science Teachers' Association of Western Australia, and the Water Corporation
Alliance	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Amazon	Hour of Code	code.org
AMC	Subs in Schools	Re-Engineering Australia Foundation Ltd.
Amcor	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Amgen Foundation	National Youth Science Forum	National Youth Science Forum
AMP	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Analytical Graphics, Inc.	Victorian Space Education Centre	Strathmore Secondary College
AndyMark	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
AngloAmerica	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
AngloGold	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Aon	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Apple	Hour of Code	code.org
Arrium	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
Arrow Energy	The Wonder of Science	University of Queensland Diamantina Institute
Arup	Victorian Space Education Centre	Strathmore Secondary College
ASC	Subs in Schools	Re-Engineering Australia Foundation Ltd.
Ashanti Australia	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA

Company	Programme	Host organisation
Atlassian	National Computer Science School Challenge (NCSS)	Grok Learning
	The National Computer Science School (NCSS)	University of Sydney and NICTA
AusIMM	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Auspace	Victorian Space Education Centre	Strathmore Secondary College
Australia Pacific LNG	The Wonder of Science	University of Queensland Diamantina Institute
Australian Business and Community Network (ABCN)	We Speak Code	Microsoft
Australian Geoscience Council	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Australian Institute of Geoscientists	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Australian Institute of Mining and Metallurgy	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Australian Power Institute	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
Autodesk	Computer Games Boot Camp	Monash University
	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
	Endeavour	University of Melbourne
Axcelerate	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Babcock	SUBS in Schools	Re-Engineering Australia Foundation Ltd.
BAE Systems	Advanced Manufacturing Industry Schools Pathway Program (ME Program)	Regional Development Australia (RDA) Hunter
	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
	The Advanced Technology Industry School Pathways Program (ATP	SA Department for Education and Child Development
BASF	BASF Kids' Lab	Monash University
Bayer	CSIRO Sustainable Futures	CSIRO Education
Bechtel	Engineers Without Borders School Outreach Program	Engineers Without Borders
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
	The Wonder of Science	University of Queensland Diamantina Institute
BHP Billiton	Aboriginal Education Program	Scitech
	Australian Science Olympiads	Australian Science Innovations
	BHP Billiton Science and Engineering Awards	CSIRO Education
	Choose Maths	Australian Mathematical Sciences Institute (AMSI)
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	CSIRO Indigenous STEM education programme	CSIRO Education
	CSIRO Indigenous STEM education programme: Aboriginal Summer School for Excellence in Technology and Science (ASSETS)	CSIRO Education

Company	Programme	Host organisation
BHP Billiton	CSIRO Indigenous STEM education programme: Inquiry for Indigenous Science Students (I2S2)	CSIRO Education
	CSIRO Indigenous STEM education programme: Prime Futures	CSIRO Education
	CSIRO Indigenous STEM education programme: Science Pathways for Indigenous Communities	CSIRO Education
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Bitreactive	Open Internet of Things (IoT) Challenge	Eclipse IoT
BlackRock Investment Management	Let's Count	The Smith Family
Bluescope, Adelaide Brighton Ltd.	University of Wollongong Women in Engineering Summit	University of Wollongong
BMA	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
BOC	National Science and Technology Centre	Questacon
Boral	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
BP Developments Australia Pty Ltd.	Earth Science WA Kits For Loan	Earth Science WA
Brickworks	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
Broens	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
Bruker Australia	Victorian Space Education Centre	Strathmore Secondary College
Bupa	Tall Poppies Reaching Students Program	Australian Institute of Policy and Science
CARMA priority research centre for computer-assisted research mathematics and its applications	Young Mathematicians Programme	University of Newcastle Faculty of Science and Information Technology
Carnarvon Petroleum Ltd.	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Cement Australia	ECOMAN	Queensland Private Enterprise Centre (QPEC)
Chamber of Minerals & Energy of WA	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Chevron	Aboriginal Education Program	Scitech
	Beyond the Beaker	Scitech
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Cigre	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
CISCO	CSIRO Scientists and Mathematicians in Schools (SMiS) and ICT in Schools	CSIRO Education
CISCO	Emerging Sciences Victoria	John Monash Science School (JMSS) and the Victorian Department of Education
	The Internet of Things Challenge	Regional Development Australia (RDA) Hunter

Company	Programme	Host organisation
Civeo	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Coal & Allied Community Development Fund	Science & Engineering Challenge	University of Newcastle
Cochlear	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
	National Youth Science Forum	National Youth Science Forum
Codan	The Advanced Technology Industry School Pathways Program (ATP	SA Department for Education and Child Development
Coder Factory	Code Club Australia	Telstra Foundation
Coles Distribution	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Commonwealth Bank	Australian Mathematics Competition (AMC)	Australian Mathematics Trust
	Mathematical Engagement and Mathematical Olympiad	Australian Mathematics Trust
	The Big Day In	ACS Foundation
Commonwealth Department of Education	The Wonder of Science	University of Queensland Diamantina Institute
ConocoPhillips	ConocoPhillips Science Experience	The Science Schools Foundation Inc.
	ConocoPhillips Science Experience	The Science Schools Foundation Inc.
	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Cosmos	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
CSC	The Big Day In	ACS Foundation
CSL Limited	Tall Poppies Reaching Students Program	Australian Institute of Policy and Science
	National Youth Science Forum	National Youth Science Forum
Dalrymple Bay Coal Terminal	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
DHL	FutuRide	Siemens
Digital Brisbane	CoderDojo	
Digital Careers	Bebras Australia Computational Thinking CHALLENGE	Bebras
	CSER Digital Technologies MOOC	Computer Science Education Research Group, University of Adelaide
	National Computer Science School Challenge (NCSS)	Grok Learning
	National ICT Careers Week (NICTCW)	ACS Foundation
	The Big Day In	ACS Foundation
	The National Computer Science School (NCSS)	University of Sydney and NICTA
Education Perfect	Australian Brain Bee Challenge (ABBC)	University of Western Sydney
Electric Energy Society of Australia	Science & Engineering Challenge	University of Newcastle
Engibear	Science & Engineering Challenge	University of Newcastle
Engineers Australia	FutuRide	Siemens
	Year 8 Challenge	Monash University
Engineers Australia	Science & Engineering Challenge	University of Newcastle
	University of Wollongong Women in Engineering Summit	University of Wollongong
EnVizage	SUBS in Schools	Re-Engineering Australia Foundation Ltd.
Ergon Energy	RACQ Technology Challenge Maryborough	Maryborough Chamber of Commerce
Ergon Energy	RACQ Technology Challenge Maryborough	Maryborough Chamber of Commerce
Eurotech	Open Internet of Things (IoT) Challenge	Eclipse IoT
Exxon Mobil	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
First Quantum Minerals Ltd.	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Flight Training Adelaide	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Fogarty Foundation	CoderDojo	
Ford Australia	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
Forgacs	Advanced Manufacturing Industry Schools Pathway Program (ME Program)	Regional Development Australia (RDA) Hunter
Fraser Coast Opportunities	RACQ Technology Challenge Maryborough	Maryborough Chamber of Commerce
Freelancer	National Computer Science School Challenge (NCSS)	Grok Learning
	The National Computer Science School (NCSS)	University of Sydney and NICTA
Futuris Automotive	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Game Development Association of Australia	The Australian STEM Video Game Challenge	ACER Foundation
Game Truck	The Australian STEM Video Game Challenge	ACER Foundation
GE	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
Gene Technology Access Centre	Residential Indigenous Science Experience	University of Melbourne Faculty of Science
General Dynamics	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
Geoconferences (WA) Inc.	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
Geological Society of Australia	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Geological Survey of Victoria	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
GlaxoSmithKline	National Youth Science Forum	National Youth Science Forum
Glencore	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Global Product Stewardship Council	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
GM Holden	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group

Company	Programme	Host organisation
Google	Code Masters	University of Melbourne School of Engineering
	Computer Games Boot Camp	Monash University
	Computer Science for High Schools (CS4HS)	Google
	CS Unplugged	CS Unplugged
	CSER Digital Technologies MOOC	Computer Science Education Research Group, University of Adelaide
	Emerging Sciences Victoria	John Monash Science School (JMSS) and the Victorian Department of Education
	Engineers Without Borders School Outreach Program	Engineers Without Borders
	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
	Google Science Fair	Google
	Hour of Code	code.org
	K-12 outreach	University of Adelaide School of Computer Science
	National Computer Science School Challenge (NCSS)	Grok Learning
	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
	The National Computer Science School (NCSS)	University of Sydney and NICTA
	Endeavour	University of Melbourne
	Code Club Australia	Telstra Foundation
Grains Research & Development Corporation	National Youth Science Forum	National Youth Science Forum
	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Greater Building Society	The Big Day In	ACS Foundation
GrowSmart Training	Science for Growth Awards	Primary Industry Centre for Science Education (PICSE)
Haines Education	Victorian Space Education Centre	Strathmore Secondary College
Hendon Semi-conductors	The Advanced Technology Industry School Pathways Program (ATP	SA Department for Education and Child Development
HP	The Australian STEM Video Game Challenge	ACER Foundation
Ian Potter Foundation	Ian Potter Foundation Technology Learning Centre (IPTLC)	Questacon
	National Science and Technology Centre	Questacon
IBM	Exploring Interests in Technology and Engineering (EXITE)	State-based Departments of Education
	National Youth Science Forum	National Youth Science Forum
	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
	The Big Day In	ACS Foundation
IGEA	The Australian STEM Video Game Challenge	ACER Foundation

Company	Programme	Host organisation
Institute of Electrical and Electronics Engineers	Endeavour	University of Melbourne
Intel	BHP Billiton Science and Engineering Awards	CSIRO Education
	CSIRO ICT in Schools: Intel Galileo Project	CSIRO Education
	Digital Careers	Digital Careers
	Endeavour	University of Melbourne
	Endeavour	University of Melbourne
IS2T	Open Internet of Things (IoT) Challenge	Eclipse IoT
Jaguar	REA Land Rover 4×4 in Schools Technology Challenge	Re-Engineering Australia Foundation Ltd.
Jaycar electronics	University of Wollongong Women in Engineering Summit	University of Wollongong
Jelinbah Group	The Wonder of Science	University of Queensland Diamantina Institute
Jellinbah Resources	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Johnson & Johnson	Tall Poppies Reaching Students Program	Australian Institute of Policy and Science
JP Morgan	InRoads	Australian Business and Community Network (ABCN)
	Real Futures Generation	Beacon Foundation
Laby Foundation	Telescopes in Schools	University of Melbourne School of Physics
Land Rover Australia	REA Land Rover 4×4 in Schools Technology Challenge	Re-Engineering Australia Foundation Ltd.
LAZSTA	iSTEM	iSTEM
Lego Education	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
	Google Science Fair	Google
Les Brazier Special Vehicles	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Levett Engineering	The Advanced Technology Industry School Pathways Program (ATP	SA Department for Education and Child Development
Lions	National Mathematics Summer School	Australian National University, Australian Association of Mathematics Teachers (AAMT)
Livingston International	Victorian Space Education Centre	Strathmore Secondary College
Local Fitness	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Lockheed Martin	Lockheed Martin Australia Engineers in the Classroom	Lockheed Martin Australia
	National Youth Science Forum	National Youth Science Forum
	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
Longneck Lagoon Environmental Education Centre	University of Western Sydney Environmental Education Programme: Longneck Lagoon partnership -Bandicoots, Bugs and Bush	University of Western Sydney
McCoskers Civil Construction	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
McKinsey & Company	TechPrep	Facebook
Melbourne Airport	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Microsoft	Hour of Code	code.org

Company	Programme	Host organisation
Microsoft	The Big Day In	ACS Foundation
Mincham Aviation	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Minerals Council Australia	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Minerals Council of Australia, Victorian Division	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Miraikan	National Science and Technology Centre	Questacon
Mitsubishi	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
MMG	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
Murphy Australia Oil Pty Ltd.	Earth Science WA Kits For Loan	Earth Science WA
	Earth Science WA School Presentations	Earth Science WA
NAB	$20 Boss	Foundation for Young Australians (FYA)
	iSTEM	iSTEM
	Macquarie University Science Partnership	Macquarie University Faculty of Science and Engineering, Department of Engineering
NASA	Space, Technology, Astronomy & Research Students Program (STARS)	Canberra Deep Space Communication Complex
	The Canberra Space Centre	Canberra Deep Space Communication Complex
National Geographic	Google Science Fair	Google
National Instruments Australia	FIRST LEGO League (FLL)	FIRST Australia
	FIRST Robotics Competition	FIRST Australia
Newcastle Mathematics Association	Young Mathematicians Programme	University of Newcastle Faculty of Science and Information Technology
Nida Corporation	Victorian Space Education Centre	Strathmore Secondary College
Northpoint	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Northrop Grumman	Science ASSIST	Australian Science Teachers Association
NRMA	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Optus Satellites	Victorian Space Education Centre	Strathmore Secondary College
Orica	Museum Express	Newcastle Museum
	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
Origin	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
	Engineers Without Borders School Outreach Program	Engineers Without Borders
	Let's Count	The Smith Family
Outotec	Endeavour	University of Melbourne
Paaus	The Australian STEM Video Game Challenge	ACER Foundation
Pitney Bowes Software	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Polycom	National Science and Technology Centre	Questacon

Company	Programme	Host organisation
Pratt Foundation	Year 8 Challenge	Monash University
Precipice Training and Jochen Kassan	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
PwC	Curious Minds: Girls in science, technology, engineering and mathematics	Australian Mathematics Trust and Australian Science Innovations
	The Australian STEM Video Game Challenge	ACER Foundation
	Young Social Pioneers program	Foundation for Young Australians
QGC	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
	The Wonder of Science	University of Queensland Diamantina Institute
QIC	The Wonder of Science	University of Queensland Diamantina Institute
Queensland Minerals and Energy Academy	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
RAAF	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
RACQ	RACQ Technology Challenge Maryborough	Maryborough Chamber of Commerce
	RACQ Technology Challenge Maryborough	Maryborough Chamber of Commerce
Raytheon	National Science and Technology Centre	Questacon
	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
	Science & Engineering Challenge	University of Newcastle
Realsmart	Emerging Sciences Victoria	John Monash Science School (JMSS) and the Victorian Department of Education
	Science & Engineering Challenge	University of Newcastle
Redarc	The Advanced Technology Industry School Pathways Program	SA Department for Education and Child Development
	Science & Engineering Challenge	University of Newcastle
Resmed	National Computer Science School Challenge (NCSS)	Grok Learning
	National Youth Science Forum	National Youth Science Forum
	The National Computer Science School (NCSS)	University of Sydney and NICTA
Rio Tinto	Aboriginal Education Program	Scitech
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
	Extracting Talent for Metallurgy	Murdoch University School of Engineering and Information Technology
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
	The Wonder of Science	University of Queensland Diamantina Institute
Rio Tinto Alcan	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Rio Tinto Coal Australia	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Rob Kirk Consultants	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Rockwell Automation	FIRST LEGO League (FLL)	FIRST Australia

Company	Programme	Host organisation
Rockwell Automation	FIRST Robotics Competition	FIRST Australia
Rotary	Microscopes in Schools	Rotary Club of Freshwater Bay, Science Teachers' Association of Western Australia, and the Water Corporation
	Science & Engineering Challenge	University of Newcastle
	ConocoPhillips Science Experience	The Science Schools Foundation Inc.
	National Mathematics Summer School	Australian National University, Australian Association of Mathematics Teachers (AAMT)
	National Youth Science Forum	National Youth Science Forum
	Science & Engineering Challenge	University of Newcastle
SA Power Networks	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
SAAB Australia	Subs in Schools	Re-Engineering Australia Foundation Ltd.
Sage Automation	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
	The Advanced Technology Industry School Pathways Program (ATP	SA Department for Education and Child Development
Samsung	National Science and Technology Centre	Questacon
Santos	The Wonder of Science	University of Queensland Diamantina Institute
	RiAus	RiAus
	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
SAP	Digital Careers	
Schneider Electric	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Science PR Australia	Tall Poppies Reaching Students Program	Australian Institute of Policy and Science
Science Supplies	Victorian Space Education Centre	Strathmore Secondary College
Scientific American	Google Science Fair	Google
Shell	Shell Questacon Science Circus	Questacon
	The Australian Innovation Challenge	The Australian
	Worlds of Work	Foundation for Young Australians (FYA)
	National Science and Technology Centre	Questacon
Shell Australia	Earth Science WA School Presentations	Earth Science WA
	Earth Science WA Kits For Loan	Earth Science WA
Sibelco	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Siemens	FutuRide	Siemens
Southern Biological	Victorian Space Education Centre	Strathmore Secondary College
Stanwell	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
Statistical Society of Australia	Australian Statistics Competition	Australian Mathematics Trust
Statistical Society of Australia Inc.	The Statistical Society of Australia Inc (SSAI) National Secondary Schools Poster Competition	University of Newcastle Faculty of Science and Information Technology
STILE	STELR (Science and Technology Education Leveraging Relevance) programme	Australian Academy of Technology and Engineering
Stockland	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Sydney Airport	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia

Company	Programme	Host organisation
Tabcorp	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Tall Poppy campaign	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales
Tata Consultancy	The Big Day In	ACS Foundation
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Technology One	The Big Day In	ACS Foundation
Telstra	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
The Australian Power Institute	Solar Car Challenge	Australian Academy of Technology and Engineering
The Australian Society of Exploration Geophysicists	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
The Petroleum Exploration Society of Australia	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
The Smith Family	We Speak Code	Microsoft
Thiess	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
3P Learning	3D online education	CSIRO and 3P Learning
Tindo Solar	NAMIG C2C (Concept 2 Creation) Programs	Northern Advanced Manufacturing Industry Group
Total E&P Australia	Earth Science WA School Presentations	Earth Science WA
	Earth Science WA Kits For Loan	Earth Science WA
TransGrid	University of Wollongong Women in Engineering Summit	University of Wollongong
Unity	The Australian STEM Video Game Challenge	ACER Foundation
UXC	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
V3 Alliance	FARLabs	La Trobe University
Various sponsors	The Advanced Technology Industry School Pathways Program (ATP)	SA Department for Education and Child Development
	Hour of Code	code.org
	CSIRO Scientists and Mathematicians in Schools (SMiS) and ICT in Schools	CSIRO Education
	High School Competitions	University of Wollongong
Vega Space	Victorian Space Education Centre	Strathmore Secondary College
Velseis	Teacher Earth Science Education Programme (TESEP)	Australian Science Teachers Association
Veolia	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Virgin Galactic	Google Science Fair	Google
Vivant	Code Club Australia	Telstra Foundation
VLSCI	Code Masters	University of Melbourne School of Engineering
Wade Institute	Endeavour	University of Melbourne
Water Corporation	Microscopes in Schools	Rotary Club of Freshwater Bay, Science Teachers' Association of Western Australia, and the Water Corporation
Wesfarmers	Queensland Minerals and Energy Academy (QMEA)	Queensland Resources Council

Company	Programme	Host organisation
Westpac	The Big Day In	ACS Foundation
Westrac	Advanced Manufacturing Industry Schools Pathway Program (ME Program)	Regional Development Australia (RDA) Hunter
Wewood	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
WiseTech Global	National Computer Science School Challenge (NCSS)	Grok Learning
	The National Computer Science School (NCSS)	University of Sydney and NICTA
	The Big Day In	ACS Foundation
Woodside	Aboriginal Education Program	Scitech
	Conservation Volunteers: Revive our Wetlands	Conservation Volunteers Australia
Woodside Energy	Earth Science WA School Presentations	Earth Science WA
	Earth Science WA Kits For Loan	Earth Science WA
Woolworths	Science 50:50 Inspiring Young Women into Science Degrees and Careers	University of New South Wales