

IDEAS FOR INSPIRING AUSTRALIA VICTORIA

GRANTS



Jobs,
Precincts
and Regions

The
**Royal Society
OF VICTORIA**
Promoting science since 1854



An Australian Government Initiative



INSPIRING AUSTRALIA VICTORIA

Inspiring Australia Victoria provides support for activities that help people from all ages and backgrounds engage in science.

We fund events and activities taking place in Victoria. The grants range from \$500 to \$2,000 and are designed to support life-long learning, kids clubs and citizen science activities.

The grants can support individuals and organisations seeking to run public science events and activities in Victoria. We particularly encourage applications for grants for regional and rural events, and events involving collaboration between two or more organisations from different sectors or disciplines.

Victorian public libraries and the 10 Victorian Tech Schools will be lead agencies in their Local Government Area for grant applications. Other agencies or individuals interested in applying for a grant should contact their local library or Tech School to discuss guidance, support or partnership.*

Our grants are typically used as seed funds, allowing event-holders to initiate their events and gain further support, if needed, from host or partner organisations. Due to the limited availability of funding, salaries cannot be funded.

Inspiring Australia Victoria grant applications generally open in March each year to support events held in the same calendar year. For updates, announcements and an online application form please visit <https://inspiringvictoria.org.au/grants>.

National Science Week Victoria also runs a small seed grants program (see inspiringvictoria.org.au/programs/national-science-week-victoria/grants/) for activities during Australia's annual celebration of science and technology each year in mid-August. Previously, National Science Week has featured workshops, lectures, demonstrations, exhibitions, festivals, competitions and film screenings. Science Week is for everyone – it is not restricted to schools and universities – with events, activities, and talks shows for every age group.

Inspiring ideas and resources

This brochure includes project examples, ideas and suggestions about how to be involved, as well as helpful tips and information.

There are great examples of children's discovery clubs, coding classes, robotics experiences, exhibitions and construction classes.

The National Science Week website (<https://www.scienceweek.net.au>) contains lots of helpful information including:

- instructions on how to run an event
- a teaching resource book full of ideas and activities
- a workplace or school science quiz ('brain break')
- information on grants that are available annually; national large grants (up to \$20,000, open October for the following year) and smaller rounds of grants from states and territories (various, open around February to May depending on jurisdiction).

FOR UPDATES, ANNOUNCEMENTS, AND AN ONLINE APPLICATION FORM, PLEASE VISIT [HTTPS://INSPIRINGVICTORIA.ORG.AU/GRANTS](https://inspiringvictoria.org.au/grants).

For more information about Inspiring Australia Victoria grants, partnerships and community engagement, please contact Ms Ann Woelk (Community Engagement and Projects Officer, Royal Society of Victoria):

03 9663 5259
ann.woelk@rsv.org.au

*Eligible public libraries must be members of the Public Libraries Victoria Network (see www.publiclibrariesvictoria.net.au). Information on the Victorian Tech Schools is available from www.education.vic.gov.au/about/programs/learningdev/techschools.

INSPIRING ACTIVITIES

Invite a scientist

The Royal Society of Victoria encourages evidence-based decision-making. To assist with this, Inspiring Australia Victoria grants can support presentations on a range of relevant topics.

For example, Bendigo Tech School hosted a talk by Dr Amy Hahs, an urban ecologist who investigates how urban landscapes affect local ecology. Amy works on a range of building projects to develop green, healthy cities and towns, and conserve resilient ecosystems where we live and work.

Her presentation, 'Harnessing knowledge, creativity and technology to build green, healthy cities for the future', explored how cities affect the health and wellbeing of humans and biodiversity, the challenges that our future cities face, and how technology, knowledge and creativity are helping us create cities for both people and nature.

Whealers Hill Library hosted a talk by Swinburne University's Dr Stephen Poropat. The presentation title was 'Australian's Mesozoic menagerie: dinosaurs from the age of reptiles'.

Only 20 Australian dinosaurs from the Mesozoic Era (252–66 million years ago) have been formally named on the basis of fossilised bones. This means that we have little idea of what these dinosaurs were like throughout much of their existence.

Dr Poropat talked about his recent research on fossils including his work on digs in the Winton area of central western Queensland.

These talks are examples of Lifelong Learning.



Little Bang Discovery Club

'Young children are already great scientists without even knowing it.'

That is the philosophy underpinning the Little Bang Discovery Club. The science program for young children is a fun-filled four-week hands-on program. It combines everyday objects and experiences with genuine scientific enquiry methods.

'We bought a kit from the Children's Discovery Museum in Sydney,' said Melissa Waight, from the City of Ballarat libraries. Each week, children and their accompanying parent or guardian take home a discovery box containing activities to explore between sessions. 'The box includes an instruction book and items such as measuring tape and a magnifying glass. The four topics covered during the program are collecting and classifying; measuring; experimenting; and a science fair.'

'We run the program for 5 to 8-year olds. At the end, there is a graduation ceremony for the junior discoverers,' said Melissa.

City of Ballarat libraries used their Inspiring Australia Victoria grant to buy lab coats and safety goggles for the participating children.

Feedback was enthusiastic. 'Please make science club all year round! We just love it and we've learnt a lot and we are inspired to do more science at home,' wrote one parent.

This program is an example of a Kids Club.



City of Ballarat Libraries

CoderDojo

At CoderDojo in Altona North, young people aged between 7 and 17 learn how to write computer code, develop applications using a variety of programming languages, create electronics circuits using the micro:bit or the Arduino, interact with the real world using a variety of sensors, and develop programs in Python, HTML and JavaScript for a small and remarkably inexpensive computer called the Raspberry Pi.

Participants develop websites and mobile apps, simple programs and games, build robots and explore various aspects of technology in an informal and creative environment.

Trevor Warren is responsible for the initiative. 'Our aim is to ignite, inspire and create. We provide the right environment to ignite students' interests and inspire them to create. There is a strong focus on community, peer learning, youth mentoring and self-led learning, with an emphasis on showing how coding, making and hacking is a force for change in the world.'

He says a council grant provided equipment to get CoderDojo Altona North started, which now meets on Saturdays at the Altona North Community library.

This program is an example of a Kids Club.



Ankit Sejwal

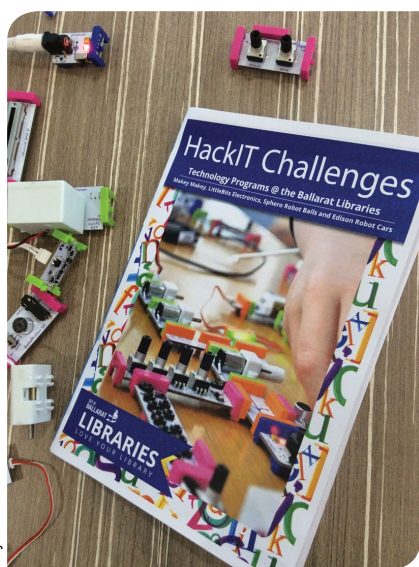
Hack It club

City of Ballarat libraries ran the Hack It club – a technology and coding program – over 11 weeks for 7 to 13-year olds. Parents and children worked together to learn how to control and code a robot, and how to program and use tennis-ball sized spherical robots known as sphero balls. They even discovered how to control a computer with a piece of fruit, as well as creating with Lego Robotics and MakeyMakey electronics.

The City of Ballarat libraries bought sphero balls with their Inspiring Australia Victoria grant.

An average of 40 children and parents attended each session. Participants' comments included, 'We love the practical, hands-on science projects that stretch your brain', 'We liked the variety of activities and the self-paced nature. It appeals and caters to a broad range of ages and abilities' and 'Thanks for such a worthwhile, fun and free program.'

*This program is an example of a **Kids Club**.*



City of Ballarat Libraries

Amazing robotic classes

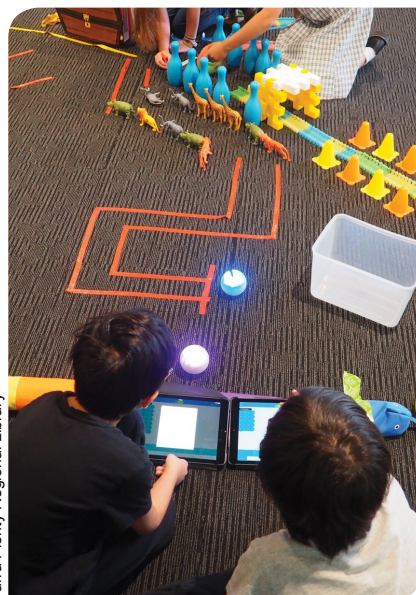
The Yarra Plenty regional library, in Melbourne's north-east, has nine branches. Each of the branches hosts coding and robotic classes adapted to meet the needs of local students.

'We've been running coding clubs and workshops for a couple of years,' said Lisa Dempster, the library public participation manager. 'Across the nine libraries, we deliver about 10 code clubs and 10 workshops each month. There are after school sessions and ones at weekends.'

'There is a high demand for coding and STEM activities. We have about 330 children participating each month, ranging in age from 7 up. Often the classes have children of mixed ages, right up to late teens, and with mixed abilities.'

'We have portable robotics kits that include sphero balls and mBots. The mBots let students build robots and learn about electronics.'

Children follow step-by-step instructions to build the mBot, which is controlled by simple programs the children create. They learn about robotic machinery and electronic parts, discover the fundamentals of block-based programming, and develop logical thinking and design skills.



Yarra Plenty Regional Library

'With funds from Inspiring Australia Victoria, we bought an mBot Ranger. It lets students work on larger projects. We have students returning time and time again to do our classes.'

The mBot Ranger kit provides a transformable educational robot that offers three different building forms: a tank, three-wheel racing car, and a self-balancing car. Students can create a variety of devices, including an off-road land raider, a self-balancing 'nervous bird' and a 'dashing raptor'. Programming and control of the device happens via a smartphone, tablet or laptop.

Lisa says there's almost no limit to the applications of equipment such as sphero balls and mBots. 'The children turn out to be more creative than adults. We've had them build a three-dimensional model town with maps, boxes and cardboard rolls and navigate their robots through it. Children have created mazes for the robots. There have been robot jousting tournaments. We have even used sphero balls to create artwork.'

'Our program is quite extensive and adaptable. Our class leaders respond to what the students would like to do,' said Lisa. 'One group wanted to make films and podcasts, so we got in the equipment and technology to enable this.'

*This program is an example of a **Kids Club**.*

Local heroes going places

Banyule Nillumbik Tech School collaborated with the Her Place Museum and the Department of Education and Training to develop the 'STEMpowered: great women in STEM' exhibition. The exhibition was held at each of the 10 Tech Schools across Victoria and showcased 10 inspirational women, including a local STEM hero. The exhibition included videos and artefacts related to the journey of each STEM career, addressing how each STEM hero became interested in their chosen field, what inspired them and advice for the next generation of scientists, technologists, engineers and mathematicians. The featured careers were in fields as diverse as games development, wearable tech, environmental science, cancer research, food waste, genetics, biotechnology, nanotechnology and mathematics.

One of the featured women, Teodora Raducan, was celebrated as a 'local hero'. Ms Raducan is an engineer and mechatronic/robotic graduate from La Trobe University.

'Visitors to the school open days saw the exhibit. There was also a women's high tea, with Ms Raducan as a speaker. We ran a community open day and market. Local female artists held an exhibition, projecting art onto the walls of a nearby local train station at night,' said Jaye Jorgensen, acting director of Banyule Nillumbik Tech School.

The Whittlesea Tech school presented Alex Kingsbury and Amanda Perdomo as their local heroes. Alex Kingsbury is Managing Director of Additive Economics and Amanda Perdomo is a certified medical physicist and medical imaging and radiation safety officer at the Royal Children's Hospital.

'The exhibition was a source of inspiration for our young people, with the Her Place Museum developing an exhibition that combined physical artefacts and an interview of each STEM hero that told the story of these amazing women. The Her Place Museum also ran a workshop for teachers on unconscious bias,' said Dr Sandra McKechnie, Director of the Whittlesea Tech School.

This program is an example of Lifelong Learning.

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The STEMpowered display at the opening of Whittlesea Tech School.

Escape room challenge

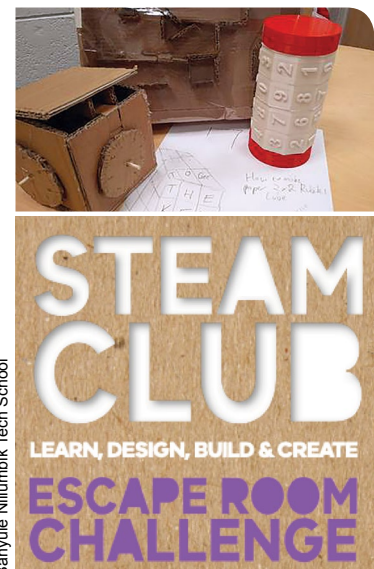
Banyule Nillumbik Tech School runs a STEAM Club, which is a collaborative learning opportunity for students to get involved in science, technology, engineering, maths and arts related activities.

'Over six-weeks, students in years 5 to 9 used the concept of an escape room to create puzzles and challenges. In groups, they researched, designed and built puzzles using themes such as ancient Rome, the bronze age and the stone age,' said Jaye Jorgensen, acting director of Banyule Nillumbik Tech School. 'The activity encouraged teamwork, creative thinking and problem-solving skills.'

'There were 21 participants. Student teachers doing their Master's degrees at RMIT developed the program. We will share the resources on request. The program is ideal for after school programs, for example.'

The activity finished with a showcase for students to exhibit their puzzles as an escape room experience for other students and their families to play. Banyule Nillumbik Tech School is planning a similar escape room challenge in 2019.

This program is an example of a Kids Club.



Coding to the Moon

As an inspiring example from interstate, Woollahra Council in Sydney wanted to give everyone in the community a chance to see a different aspect of STEM, taking it out of schools and other formal learning situations into the space of fun.

Moonhack definitely took kids to that space – setting a challenge to write enough code to reach the Moon and back. The library supplied the devices and a professional coder, but the kids soon streaked ahead, coding games with more tricky traps, extra levels, and other features to make their game more difficult for players.

And these kids were here because they really wanted to be there. ‘9 to 12-year-olds have busy calendars – homework, sports and other extra-curricular activities,’ said Sarah Evans from Woollahra Municipal Council. ‘They really got into it – it was brilliant to see them take the initiative and say, “We can do more!”’.

As well as the coding competition, other kids learned about the concept of density by making timers out of oil and water, or brought out their inner engineer in the kinetic sand pit. Andrea Beaty’s books inspired kids with tales of invention and discovery, and the Mini-Makers Club got kids into the kitchen to try out recipes for volcanoes and slime. According to Sarah, all activities involved things that you can do at home, and ‘the messier the better really’.



Providing a helping hand

In another interstate example, a love for science can start early through curiosity about everyday objects.

‘We’re a small library in a rural area,’ said Heather Lymburn from the Clare and Gilbert Valleys libraries in South Australia. ‘The nearest 3D printer is two hours away by car. We don’t want the learning to stop when the kids walk out the door, so we have to come up with ways of learning that can happen anywhere and anytime, with simple materials they can find at home and, of course, in books and other resources from the library.’

The library inspired children to think about biomechanical concepts by getting them to build a mechanical hand, based on a prototype as well as their own hands. They could also explore engineering concepts by building a bridge using straws, cardboard, glue, string and paper clips, and get to grips with levers, pulleys, inclined planes, and concepts like work and force.

Heather said that narrative is important. ‘We always try to base learning on a story, either through a book or simply telling as you are doing,’ she said. ‘It’s a really good jumping off point for critical thinking skills. It gets kids asking why, which they are very good at.’

For the libraries in the Clare and Gilbert Valleys, National Science Week is a particularly intense time in a year packed with inquiry and learning. This way of learning brings out the best in kids. ‘We saw them share ideas, cooperate with each other and praise what the others were doing,’ said Heather.

Get the bug

The National Waterbug Blitz is Australia’s first nationwide waterway monitoring event.

Each spring, Australians are encouraged to become citizen scientists and investigate the health of their local waterways and wetlands by exploring and identifying what waterbugs they contain. The type and number of waterbugs can tell us a lot about the health of the waterway.

Monash Tech School hosted an information session featuring Yvonne Cabuang, Waterwatch Coordinator with Melbourne Water, and Fred Bullock, from the Friends of Scotchman’s Creek and Valley Reserve.

This initiative provides training through downloads and apps, and there were waterbug kits available for loan.

*This program is an example of **Citizen Science**.*



Science for all

'I moved to Australia about five years ago from Britain. I come from a country where we've destroyed our old-growth forest – once it's gone, it's gone. When I moved here, I learned that trees hundreds of years old were being cut down and that species that rely on these habitats are critically endangered. Researchers were using thermal imaging equipment to monitor species. I thought it would be valuable to involve the public in this important research.'

Jack Nunn recalls the reasons he established 'Science for All', a not-for-profit organisation that supports citizen science activities. 'Science for All' is run by volunteers and is always looking for more people to help out.

'Many of the challenges facing the planet today do not have simple solutions. Knowledge takes many forms. There are subject area experts, and people with traditional, Indigenous or local knowledge. Our aim is to bring together experts from these diverse areas to work in partnership with as many people as possible by using a combination of free face-to-face

events in metropolitan and rural areas, as well as online tools,' said Jack.

'One of the ways we do this is through our project, Campfires and Science.'

Campfires and Science is a community of people who meet outdoors, light a campfire, and share knowledge. There are regular trips into the wilderness to support scientific research and provide hands-on learning about how to do research.

'We don't have time any more to wait for funds for research, so there's real value in involving the public. We often spot critically endangered animals and share these data with the government so they know which areas to protect.'

Jack has received grants from the Victorian Government for the project 'Wild DNA', which is training people to collect environmental DNA samples and contribute to improving biodiversity in the Victorian Central Highlands. The hope is that the DNA samples from waterways and forests will identify the presence of endangered species in them.

Science around a campfire

Whittlesea Tech School collaborated with the Science for All organisation and Inspiring Australia Victoria/Royal Society of Victoria to run a Campfire and Science event at the Nioka Bush Camp in the Plenty Gorge, an urban nature park in Melbourne's north.

'A large contingent of community members were treated to demonstrations of scientific uses of drones, night photography, and a talk by Uncle David Wandin around the campfire about an experimental archaeology project to make a bark canoe using traditional Wurundjeri techniques,' said Stefan Schutt, a director of Whittlesea Tech School.

'Visitors also had the chance to sample the Plenty River water and see live environmental DNA testing to check for evidence of platypuses.'

*This program is an example of **Citizen Science**.*



OUR TIPS

- Regularly check the Inspiring Australia Victoria website: <https://inspiringvictoria.org.au>
- Consider inviting a scientist to visit your town or area to speak on a topic of interest or local concern
- Check out Questacon's list of hands-on STEM activities: <https://www.questacon.edu.au/outreach/programmes/questacon-smart-skills-initiative/workshops/resources/teacher-resource-hands-stem-activities>
- Use the resources of the Children's Discovery Centre, such as their Little Bang Book of Discovery's fun, simple experiments to do at home using everyday items: <https://childrensdiscovery.org.au>
- Explore a galaxy of possibilities for mobile STEM programs or online and in-class learning on the STARportal, the Office of the Chief Scientist's directory of STEM activities: <https://starportal.edu.au>
- Visit the CSIRO Education page: <https://www.csiro.au/en/Education/Programs>
- Draw ideas from 50 Kids' Activities from CSIRO: <http://www.publish.csiro.au/book/7556>
- Use CSIRO's Double Helix magazine: <https://www.csiro.au/en/Education/Double-Helix>
- Be inspired by San Francisco's Exploratorium: <https://www.exploratorium.edu/explore/activities>
- Check out the Powerhouse Museum's lesson plans and worksheets: <https://maas.museum/event/ecologic/resources/lesson-plans-worksheets>
- Check out Australian Citizen Science Association website for ideas on Citizen Science activities: <https://citizenscience.org.au>

For updates, announcements, and an online application form, please visit <https://inspiringvictoria.org.au/grants>.



City of Ballarat Libraries



Yarra Plenty Regional Library

Please contact the Royal Society of Victoria to discuss your event ideas and seek suggestions for speakers or formats.



Contact us

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