VICTORIA

Thursday, 23 October 2025

It Takes a Spark!
STEM Conference

Theme: Adapt : Inspire – shaping the future

The It Takes a Spark! STEM Conference inspires and engages forward thinking Year 4 to 10 students, teachers and leaders in STEM.

Teacher Professional Development from leading STEM experts on topics as diverse as:

- Adobe Creative Educator Level 1 micro-credential course
- Developing Future Ready Learners
- Maths Made Meaningful
- Innovation in STEM Education – Made in Sweden
- Using Design Thinking to Help Students Partner with Real World Organisations
- STEM for Wildlife Conservation
- AI and our Purpose: Shifting Practice to Meet the Real World
- Inspire & Apply: Turning STEM Activities into Scientific Learning

Hands-on workshops for students and teachers, examples...

- Detecting the Unseen: Dark Matter
- Empowering Young Voices: Becoming the storyteller for your community
- Make Science a Fashion Statement
- Quantum measurements using light
- Button it Up – Safety by Design
- You are our next CyberHero!
- Rockin with robots!
- Pippi Problem-solver!
- Build and Code a robot in under 40 minutes
- Spark the Wind Mini-Windmill Rescue
- STEM EXPO activities
  - *Inspired by Nature: Discovering design secrets from the natural world
  - *Cartesian Divers
  - *MagLev Technology
  - *Mystery Ingredient Challenge: Oz Harvest Waste Warriors Edition
  - *FIRST Robotics Competitions (FLL Challenge, FTC and FRC)
  - *The Martian Garden
  - *Fly, Build, Design!
  - *IXL Maths Leaderboard Competition
  - *Multimedia Microscopy

Problem Solver sessions: design challenges taking students and teachers through the design process including...

- Design Solutions via LEGO and App Prototyping
- Moonbase – Designing to Survive and Thrive
- Learn to Design Games: Mechanics, Dynamics, Aesthetics
- F1 Engineers & the Future of EVs
- Invention Remix: Tools for an Unknown Future
- Sustainable Spaces
- Designed by Nature: Innovating with Biomimicry
- Tinker Tales
- From Code to Control: Exploring Automation with Raspberry Pi
- Game on! Using tabletop games to plan and design video games

...and many more

Outstanding Keynote Speakers

DR TIM KITCHEN

Senior Education Specialist
Adobe

Following 23 years teaching Primary, Secondary & Higher Education, Tim has been Adobe's Senior Education Specialist for Asia Pacific since 2013.
A passionate advocate for creativity in education, and a well-recognised education thought leader in Australia, Tim is a regular presenter for a wide range of national and international education events. Tim has also recently released his new book The Best Way to Learn is to Make – Creativity in a Gen AI World
He regularly liaises with schools & universities focusing on enhancing creativity in education. He also manages the Adobe Education leadership and active use programs throughout Australasia and helps lead the Adobe Education Exchange which now has over 900,000 members.

ASSOCIATE PROFESSOR PHOEBE TOUPS DUGAS

Exertion Games Lab, Creative Technologies Discipline Group
Monash University

Video games offer opportunities for play, learning, and work, but they can also propagate harm to marginalised communities. Information systems, including video games, are embedded in our lives. How can we design for joy, rather than harm?
A/Prof. Phoebe Toups Dugas "a queer, trans woman gamer" pulls apart games to understand how to make them better and how to use games to make the world a better place. This work supports underserved groups, most recently queer gamers, but previously disaster responders.
Phoebe earned her Ph.D. in Computer Science from Texas A&M University in 2010. She went on to work at the Disaster City responder training facility, then joined New Mexico State University for ten years. She co-founded the Transgender Name Change Policy Working Group, which transformed inclusive publishing practices. During her tenure, she attracted over $3 million in research funding from the National Science Foundation to support her work on disaster response. She recently relocated to Australia to join Monash University in the Faculty of Information Technology, where she is focused on transgender inclusivity in information system design.

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Host School

The Knox School
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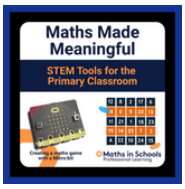
Developing Future Ready Learners

Dr Adrian Bertolini, Intuyu Consulting
Students who are great problem solvers and critical thinkers have developed the mindset and skills to be able to drive their own learning. They have practices and strategies to trial ideas, reflect on what works and what doesn't, and then use this feedback to improve. However, most STEM learning focuses on students delivering a product rather than having students learn how having a great learning process will sustainably deliver a great outcome.
In this presentation, Adrian will share some of the thinking and structures he has used with schools across Australia to develop students who drive their own learning and are future ready for an ever-changing world.
Suitable for Primary & Lower Secondary Teachers

Adobe Creative Educator Level 1 micro-credential course

Adobe Education
Adobe Express for Education gives students and educators everything they need to create graphics, flyers, photos, presentations, web pages, and videos — and express themselves in unique and beautiful ways both inside and outside the classroom. It is free to schools and includes features designed to support student learning and safety, including safe search functionality.
In this teacher session, Dr Tim Kitchen will deliver the Adobe Creative Educator Level 1 micro-credential course. The ACE level 1 micro-credential emphasises the significance of creativity in education in all curriculum areas and incorporates insights from both global and local experts. It also equips teachers with practical strategies to foster digital creativity across various subject areas using Adobe Express.
Suitable for Primary & Secondary Teachers ***80 minute session BYO internet enabled laptop**

Maths Made Meaningful



University of Adelaide – Maths in Schools Project
Unlock the power of digital technologies to make maths engaging and purposeful.
In this hands-on workshop, you'll explore how Micro:bits can bring the core maths concepts of data, computational thinking and algorithms to life through STEM. Discover free professional learning opportunities from the Maths in Schools and CSER STEM Professional learning resources covering Maths, AI, cybersecurity, and digital technologies.
Suitable for Primary & Lower Secondary Teachers ***BYO internet enabled laptop**

Innovation in STEM Education – Made in Sweden

Dr Eva Hartell, KTH Royal Institute of Technology, Sweden
Sweden is globally recognized for its creativity, problem-solving, and innovative design—qualities embedded in its STEM education. This session explores how Swedish schools foster curiosity, critical thinking, and hands-on learning through engaging STEM activities. Practical examples will be drawn from a European STEM education research project focused on formative assessment and sustainable development.
Participants will discover classroom-tested approaches that connect STEM with real-world problem-solving and design thinking. By examining Sweden's innovative education strategies (including peer assessment), attendees will gain fresh ideas to inspire students, encouraging them to think like engineers, designers, and inventors.
Suitable for Primary Teachers ***Teachers are recommended to bring their laptops and mobile phones**

Using Design Thinking to Help Students Partner with Real World Organisations

Doncaster Secondary College
Design thinking offers a fresh approach to teaching and learning, emphasising empathy, creativity, and continuous improvement. When students apply design thinking to challenges occurring in real world organisations, not only is the learning meaningful to them, the students develop the skills and mindset needed to solve complex problems in innovative ways.
In this workshop, you will be guided through the process of incorporating Design Thinking across all subjects to create meaningful community partnerships. Tony will share his journey of overcoming misconceptions and barriers to leading a successful collaboration with his local council. You will gain practical insights on how to implement this approach in your own school, leading to your own success stories that can drive real-world impact and strengthen community connections.
Suitable for Primary and Secondary Teachers

STEM for Wildlife Conservation

Zoos Victoria
In the ever-evolving field of wildlife conservation, technological innovation is essential to protecting our planet's most threatened species. Join Zoos Victoria for a dynamic teacher workshop where you will step into your students' shoes, exploring hands-on STEM for Wildlife activities through a Design Thinking lens. Discover how to bring real-world conservation challenges into your classroom using Zoos Victoria's innovative resources and the Fighting Extinction Schools program.
This session empowers you to create engaging, cross-curricular lessons that foster critical thinking, empathy, and a passion for protecting endangered species—equipping you with the tools to inspire the next generation of changemakers
Suitable for Primary and Secondary Teachers

AI and our Purpose: Shifting Practice to Meet the Real World

The Knox School
This workshop empowers teachers to reimagine learning design for the age of AI. Participants will explore three practical elements of using AI to support learning: how to align tasks with purpose, using AI to deepen student critical thinking rather than replace it, and ensuring learning design prepares students to think, communicate, and act ethically in a world with AI.

Suitable for Primary and Secondary Teachers

Inspire & Apply: Turning STEM Activities into Scientific Learning

Inspire Robotics
The recently updated ACARA STEM connections resources have focused on the importance of providing interdisciplinary learning that is both authentic in its context as well as addressing the Curriculum.
This session demonstrates HOW teachers can authentically and practically bring together Science Understanding, Science as a Human Endeavour and Science Inquiry using Inspire Robotics Battle Bots program as a case study. You will learn how to embed scientific inquiry into everyday lessons, helping you link the excitement of building and creating to core science concepts — and carry that curiosity into deeper learning.
Suitable for Primary and lower Secondary Teachers

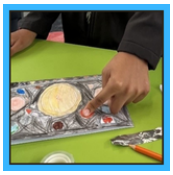
Conductivity with Makey Makey

St Peter Julian Eymard Primary School
Conduction refers to the movement of electrical charge (usually electrons) through a material, with materials that allow this flow easily being called conductors, while those that resist it are insulators.
In this hands-on workshop you will have the opportunity to explore the conductivity of a range of everyday items using Makey Makey. Come along and make a piano using play dough and fruit and even play a Scratch game using a makey makey circuit as a controller!
Suitable for Year 4 to 6 students and/or teacher

Detecting the Unseen: Dark Matter

ARC Centre of Excellence for Dark Matter Particle Physics
Dark Matter is the mysterious material that scientists think makes up over 80% of our Universe but has not yet been directly detected. Australia is at the forefront of Dark Matter research. The science of dark matter involves everything from the largest structures in the Universe to the smallest known particles that make up the atom.
In this session, students and teachers will be guided through activities to understand how scientists learn about the 'invisible' with clues from the cosmos and to understand how scientific discoveries are building our understanding of matter in the universe. Teachers will receive lesson plans to bring these activities back to their classrooms.
Suitable for Year 7 to 10 students and/or teacher

Button it Up – Safety by Design



Rangeview Intermediate School, New Zealand
Button batteries are as dangerous as poisons and must be kept away from children. Swallowing button batteries can cause symptoms similar to common childhood illnesses, such as noisy breathing, chest pain, drooling, and problems swallowing.
In this hands-on workshop, you will design and create a prototype of a card with electronics with the constraint that your design minimises or eliminates the button battery hazard for young children. Come and learn about how real-world design makes a difference!
Suitable for Year 4 to 8 students and/or teacher

Quantum measurements using light

The University of Melbourne, Dept. Electrical and Electronic Engineering
Light is a form of electromagnetic radiation, meaning it is composed of oscillating electric and magnetic fields. This radiation includes a wide range of wavelengths, from gamma rays to radio waves, with visible light occupying a small portion of the spectrum. Light exhibits properties of both waves and particles, a concept known as wave-particle duality. Using its wave nature, we can precisely measure our environment, such as distances, vibrations, and even gravity waves. Using its particle nature we can compute mathematical functions.
In this hands-on workshop you will use a Michelson interferometer to explore how light waves can be used to measure distances and vibrations, and polarisation filters where light particles can be used to improve the measurement precision.
Suitable for Year 7 to 10 students and/or teacher

Empowering Young Voices: Becoming the storyteller for your community

Kids Cast
Audio storytelling is a powerful form of narrative that uses sounds, voices, and music to create a compelling and immersive experience for listeners. It evokes emotions, builds empathy, and creates lasting memories. This technique has been used for centuries, evolving from oral traditions to radio dramas and, more recently, podcasts.
In this hands-on 40-minute workshop, you will explore the power of audio storytelling using KidsCast's portable podcasting studio. With expert guidance from the KidsCast founders, you will gain practical podcasting experience and leave with a deeper understanding of how audio storytelling can empower your voice. No prior audio experience necessary.
Suitable for Year 4 to 10 students and/or teacher

You are our next CyberHero!

La Trobe University – School of Computing, Engineering and Mathematical Sciences
Cyber threats are on the rise, and Australia has become a frequent target of major cyberattacks—from the Optus data breach to the Medibank ransomware incident. But it's not just large organisations that are at risk. Everyday Australians, especially young people, are increasingly falling victim to phishing scams, online fraud, deepfakes, cyberbullying, and grooming.
In this hands-on workshop, you will explore the exciting and vital world of cybersecurity. You will learn about real-world cyber threats, how to protect yourselves online, and gain practical skills in areas like password security, open-source intelligence (OSINT), and cryptography. Through interactive activities and real-life scenarios, not only will you become more cyber-aware—you will also see how you could be Australia's next cyber hero.
Suitable for Year 7 to 10 students and/or teacher

Out of Sync: Ancient Bodies vs the Modern World

The Knox School
How do smartphones, fast food, and stress culture affect our health, and what does evolution have to do with it? This interactive workshop explores the mismatch between our slowly evolving biology and the rapid pace of cultural and technological change. Designed for students and educators, the session highlights how these mismatches contribute to modern health challenges and how biomedicine responds. Join us to connect science, health, and innovation through hands-on activities and creative problem-solving.
Suitable for Year 8 to 10 students and/or teacher

Build and Code a robot in under 40 minutes

Edminds
Robotics has become a key piece of technology to society. Not only can robotics help you understand what real world STEAM is like, it teaches you how to work in teams, improves your communication skills, teaches you to problem solve and think critically, and prepares you for the future.
In this interactive workshop using the AIKIRO Series, you will explore STEM by building a robot and programming it using a screen-free coding pen without any computers or devices. Along the way, you will have the opportunity to strengthen essential skills like logic, creativity, communication, and resilience - all in under 40 minutes.
Suitable for Year 4 to 6 students and/or teacher

Spark the Wind Mini-Windmill Rescue

Britannica Education
Inspired by The Boy Who Harnessed the Wind, you will work in pairs to design and build mini-windmills that convert airflow into rotary motion to lift a paper-clip "water canister."
Working your way through rapid sketch–build–test cycles, you will learn to apply wind-force mechanics and the Engineering Design Process to come up with the most effective blade design.
Suitable for Year 4 to 7 students and/or teacher

Railway Signalling with Puffing Billy

Puffing Billy Railway
One of the most important things at Puffing Billy is safety and one of the most important pieces of equipment to keep our passengers safe is our signalling system that allows the train to move along different parts of the line and stop people and trains moving along the track when it isn't safe.
In this workshop you will be faced with a real-world STEAM challenge at Puffing Billy Railway. As designers you are going to use design thinking to come up with innovative ideas and create a prototype to help solve this problem. You will need to rely on teamwork and communication to complete this task and create a design as a team.
Suitable for Year 5 to 7 students and/or teacher

Pippi Problem-solver!

Dr Eva Hartell, KTH Royal Institute of Technology, Sweden
Pippi is red-haired, freckled, unconventional and superhumanly strong – able to lift her horse one-handed. She is playful and unpredictable. She often makes fun of unreasonable adults, and has become great at solving problems and overcoming the challenges she faces!
In this playful workshop you will use the story of Pippi Longstocking to learn the strategies of experimentation, creativity, and engineering thinking. Learning STEM has never been more fun!
Teachers will walk away with ready-to-use activities that spark curiosity and empower students to think like inventors, engineers, and creative problem-solvers!
Suitable for Year 4 to 6 students and/or teacher

Coding with Dash Robots

Flinders Christian Community College
Obstacle avoidance, in robotics, is a critical aspect of autonomous navigation and control systems. It is the capability of a robot or an autonomous system/machine to detect and circumvent obstacles in its path to reach a predefined destination.
In this hands-on workshop you will bring Dash Robots to life using block coding to navigate obstacle courses and perform fun tasks. This interactive session combines critical thinking, problem-solving, and creativity, allowing you to explore the fascinating world of robotics and how they can be programmed to avoid obstacles!
Suitable for Year 4 to 7 students and/or teacher

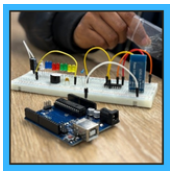
Zooming Bottle Rockets!

Monash High Powered Rocketry
The use of rockets dates back to at least 13th century China but significant scientific, interplanetary and industrial use did not occur until the 20th century with the advent of the Space age. We are again entering an exciting period of rocketry with space missions and rocket launches planned by many countries.
In this exciting workshop the student team from Monash High Powered Rocketry will not only share with you what they are working on but give you the opportunity to construct bottle rockets to launch outside from a water pressure-powered launch pad. You will learn the strategic design choices that need to be made when building a rocket! Are you ready to be a high-powered rocketeer?
Suitable for Year 4 to 7 students and/or teacher

Rockin with robots!

Robogals Melbourne
Robogals is a student run organisation that aims to inspire and empower young women to consider studying engineering and related fields.
In this workshop, you will work in teams to learn to program the actions of Lego Spike Prime robots using block coding (perfect for beginners!), gradually increasing in difficulty and complexity. The movements will range from simple traversal, to a more complex use of sensors, and loops. Can you overcome all the challenges and demonstrate your Engineering prowess?
Suitable for Year 4 to 7 students and/or teacher

TSAL: Technology Sparks Active Learning

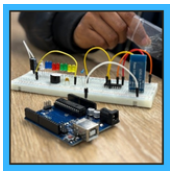


Monash Motorsport
Monash Motorsport is a student-run team who compete in the largest formula style race car competition in the world. The team is comprised of university students from a range of faculties, including engineering, commerce, science, design and law; that work collaboratively in technical, business and management aspects.
In this hands-on workshop, you will learn about systems thinking and iterative engineering design through building, testing and modifying a range of LED circuits to mimic the TSAL behaviour seen on a race car. Along the way you will learn about integrated circuits, RC circuits and how logical reasoning and creative problem-solving skills are core to real-world engineering.
Suitable for Year 7 to 10 students and/or teacher

Make Science a Fashion Statement

Oh Pluto
Art and science are not separate entities but often intertwine, with each influencing and informing the other. Examples include Leonardo da Vinci's use of anatomy and perspective in his art, architecture which combines artistic design with engineering, and sound engineering where acoustic science is applied to create artistic experiences.
In this hands-on workshop you will use your creativity, self-expression and STEM knowledge to design your own earring, brooch or necklace prototype in a science topic of your choice. Along the way you will learn about material choice, design principles and how Science can make a fashion statement!
Suitable for Year 7 to 10 students and/or teacher

Build your own Mini-BB Rovers!



Monash Nova Rover
Monash Nova Rover are a team of university students who are passionate about designing and building Mars and Lunar rovers. They compete in the world's most prestigious university robotics competitions which supports them to develop new skills, innovate and promote STEM-based courses and careers.
In this hands-on workshop, you will have the opportunity to build and race your own mini rovers using breadboards, 3D-printed parts, and electronics! Along the way you will learn about engineering, working in teams, and our dreams of building rovers for space.
Suitable for Year 5 to 10 students and/or teacher

STEAM Expo: hands-on activity area - Student and/or Teacher (selected as one workshop as you move around the activities)

Cartesian Divers
Eltham Primary School
Buoyancy (Archimedes' principle) is the tendency of an object to float in a fluid. But why?
In this brilliant experiment, the students from Eltham PS will demonstrate how a diver can be made to sink and float in a bottle of water. Is it magic? It is science? Can you guess why the diver moves the way it does? All attendees will have the opportunity to make their own diver to test the concept and take it home to experiment themselves!
Suitable for Year 4 to 7 students and teachers

The Martian Garden
ARC Centre of Excellence for Plants for Space
On entering the Mars habitat, you will become the scientists needed to sustain life off-earth, plant biologists, engineers, psychologists, and food chemists. You will program vertical farms and harvesting robots, measure plant growth conditions, use DNA and imaging technologies, process plants and 3D print them into new Space-food products.
Suitable for Year 4 to 10 students and teachers

Inspire Robotics: Shaping Future Innovators
Inspire Robotics
Ready to blast into the future of STEM with hands-on tech, wild creativity, and epic invention? Gear up and get in the ring with our Battle Bots—pre-built and ready to rumble. While you are there, check out our aerospace program, or lock in with student-designed games and consoles that are pushing the boundaries of design and creativity.
Meet the trailblazers from Inspire Robotics and dive into the programs that are making science exciting, inclusive, and fun. Whether you are a curious student or a passionate teacher, this is where STEM gets real—interactive, creative, and seriously cool.
Suitable for Year 4 to 10 students and teachers

IXL Maths Leaderboard Competition
IXL Learning
IXL Learning are passionate about improving learning for all. We apply technology in thoughtful and innovative ways to unlock students' innate curiosity, creativity, and desire for knowledge.
In this exciting Expo activity students will compete in IXL Maths activities and be able to track the Maths competition leaders on a leaderboard. The overall winner at the end of the day will receive a tablet! Teachers will be able to find out how IXL's personalised learning can support students in building their skills and knowledge in Maths, English and Science.
Suitable for Year 4 to 10 students and teachers

KidsCast – The Voice of Your Community
Kids Cast
KidsCast offers a complete podcasting solution—featuring a portable studio and professional editing service—that enables students to create high-quality audio content with ease. Aligned with the curriculum and supporting STEM learning, KidsCast empowers young voices, strengthens communication skills, and builds stronger connections within your school community.
In this interactive Expo activity, students and teachers will have the opportunity to test the portable studio and learn how to become the storytellers of the future!
Suitable for Year 4 to 10 students and teachers

Discover Electronics with Kids Unlimited!
Kids Unlimited
Kids Unlimited believes that education is a journey that students and teachers undertake together. From discovering the basic concepts to developing deeper understanding and sharing their knowledge in a celebration of learning or competition.
In this hands-on Electronics Workshop, you will be able to use our custom-designed electronics kits to explore circuits, switches, and voltage. With no sharp wires or complex boards, you will have the opportunity to build exciting projects that spin, fly, light up, and make sound, all while discovering how electricity powers the world around you.
Suitable for Year 4 to 5 students and teachers

Creating a more immersive STEM environment
BenQ Australia
BenQ is a world-leading human technology and solutions provider aiming to elevate and enrich every aspect of education.
In this Expo activity, you will discover how the BenQ panels can help enhance discussions and support creating a more immersive STEM environment. The BenQ team will demonstrate a range of interactive STEM based Apps including Thinglink which helps users create presentations, virtual tours, VR experiences; as well as how the integrated AI tools can be used (e.g. identifying and providing information on insects and flowers shown on the panel).
Suitable for Year 4 to 10 students and teachers

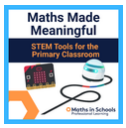
Engineering in Action!
Robogals Melbourne
Engineers apply scientific principles to analyze, design, invent, code, build, and create to solve all sorts of problems and make the world a better place. One of their most important tools is their own creativity.
In this Expo you will have the opportunity to meet current engineering students who are part of Robogals at the University of Melbourne. They will showcase Arduino microcontrollers, share about what Robogals do, and discuss the different Engineering disciplines and what they involve.
Suitable for Year 4 to 10 students and teachers

FIRST Robotics Competitions (FLL Challenge, FTC and FRC)
AI Cubed Academy
FLL (FIRST LEGO League), FTC (FIRST Tech Challenge), and FRC (FIRST Robotics Competition) are three distinct robotics competitions organized by FIRST (For Inspiration and Recognition of Science and Technology), designed to engage students in STEM education from different age groups.
Helix Robotics is a nationally recognized champion team, having represented Australia on the international stage in three of the past four years since entering competitive robotics. In this Expo activity you will have an opportunity to examine Helix robots from previous seasons and see demonstrations illustrating how various competition missions are effectively approached and solved. This is a great way to get insights from a national champion!
Suitable for Year 4 to 10 students and teachers

STEMpal: You can't be who you can't see!
Curiosity Factory
Have you ever wondered what people who work in STEM fields actually do? How can you ever find out about all the amazing things you can do and be with STEM? Especially when the current high school curriculum only includes 1 woman in the 145 STEM professionals mentioned.
In this expo activity you will not only meet some real live STEM professionals but also learn how you can connect and become pen pals with some amazing STEM professionals. Discover real world STEM people -so you can be who you can see!
Suitable for Year 4 to 8 students and teachers

Mystery Ingredient Challenge: Oz Harvest Waste Warriors Edition
OzHarvest Australia
Each year Australians waste around 7.6 million tonnes of food across the food supply chain. This equates to about 312kg per person. Food waste costs the Australian economy around $36.6 billion each year. The choices we make have an impact on how much food waste we produce. These choices are influenced by people's attitudes and behaviours towards food.
In this fun activity, students reach into a mystery box to feel an unfamiliar fruit or vegetable. After identifying it, they brainstorm and design a creative recipe using the ingredient. This promotes food waste reduction, encourages creativity, and helps students think about innovative and nutritious ways to 'Use It Up'.
Suitable for Year 5 to 8 students and teachers

Blast Off to the Virtual Universe!
OzGrav (ARC Centre of Excellence for Gravitational Wave Discovery)
In the Universe, massive objects warp the fabric of space-time and colliding black holes create waves that spread out over millions of light years in space!
In this expo, you will explore the planets of our solar system, the varieties of stars in our universe, and beyond to exotic objects such as black holes! Using virtual reality exploration, you will observe and learn about: differences and similarities among planets, why stars have different sizes and colours, how stars change over time, how stars affect the motion of objects in space, and how scientists observe dark objects like black holes.
Suitable for Year 4 to 10 students and teachers



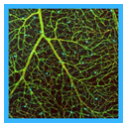
Discover and Do: Maths Made Meaningful
CSER and University of Adelaide – Maths in Schools Project
In this Expo activity, you will put randomness to the test by coding or interacting with Micro:bits and Ozobots to play Rock, Paper, Scissors. Is the technology truly making random choices? Collect and analyse results to uncover patterns and consider how chance works in digital systems. Our National Lending Library has these devices and a range of other robots available for schools to access for free. Teachers join us to find out more and discover the rich, curriculum-aligned resources.
Suitable for Year 4 to 8 students and teachers

MagLev Technology
WeBuild
Get ready to float into the future with magnetic magic! Webuild's exciting Maglev Expo activity demonstrates how science and engineering team up to make trains levitate and zoom at lightning speeds.
Explore the power of magnetism: our model uses magnetic forces to lift the train off its tracks—say goodbye to wheels and friction! Dive into the physics behind how like poles repel, and discover how superconducting magnets and magnetic fields create this futuristic form of transportation.
From younger students curious about how magnets work to older teens exploring advanced concepts like electromagnetic induction and propulsion, there's something mind-blowing here for everyone.
Suitable for Year 4 to 10 students and teachers

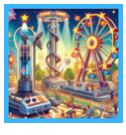
Inspired by Nature: Discovering design secrets from the natural world
Royal Botanic Gardens Victoria
Biomimicry is the practise of observing what works in nature and copying it to solve problems, create and innovate. To do this we must identify the function in nature that we want to emulate and use in design.
This expo activity will challenge you to deconstruct a Biomimicry invention, observe and explore natural materials using scientific tools (like microscopes and magnifying glasses) and identify and discover functions in nature, linking them with functions in design. While you are there, find out about the Royal Botanic Gardens and its programs!
Suitable for Year 4 to 10 students and teachers

Light Explorers!
Britannica Education
Light has been scientifically investigated for centuries by humanity and it has some amazing properties. In this hands-on Expo activity you will have the opportunity to explore how light bends and breaks into rainbows using diffraction glasses. With hands-on observation and drawing, you will investigate how white light contains many colours and how diffraction reveals hidden patterns just like in bubbles, CDs, and butterfly wings.
Suitable for Year 4 to 6 students and teachers

Fly, Build, Design!
Bentley Systems
Bentley Systems creates software products and services that are used to design, engineer, build, and operate large constructed assets such as roadways, railways, bridges, buildings, industrial plants, power plants, and utility networks.
In this Expo activity, you will discover how to convert drone-captured images into detailed 3D models. You will have the opportunity to then experiment with importing the model into LumenRT to create dynamic flythrough animations for visualization purposes. Finally, you will get the chance to use Bentley OpenRoads ConceptStation to use the same 3D model to explore conceptual road design!
Suitable for Year 4 to 10 students and teachers



Multimedia Microscopy
Cranbourne West Primary School
We are surrounded by an amazingly beautiful and complex world but most of it is hidden from us because it is so small! But science and technology have an answer!
In this Expo the students from Cranbourne West Primary will share the research they have done looking at the microscopic world – insect adaptations, fine details of plant life, what's really in our pond – and linking it to their perspective of everyday life. There will also be both traditional microscopes and digital microscopes so you can get a closer look at any of the items they have brought along!
Suitable for Year 4 to 8 students and teachers



STEMPower – from concept to reality
Orchard Grove Primary School
Electricity and circuits are just about everywhere and a part of most of our daily lives. From the electrical wiring in your home that powers the lights and TV, to the ignition system that starts your car, there are circuits everywhere that allow electricity to safely flow all around us.
In this Expo the students from Orchard Grove Primary will showcase some of their amazing electrical creations including working vacuum cleaners and Ferris wheels! They will have the working tools that they created from scratch (including 3D designing and printing parts), as well as posters/presentations with the prototypes and their design process. The students will discuss what they did, how they researched and created their tool, also how it works. They will also talk about troubleshooting and how they got to the end product. Come along and be amazed!
Suitable for Year 4 to 6 students and teachers

Problem Solvers Design Challenge - Student and Teacher

Each session has a different real life design or STEAM challenge to solve aimed at Year 4 to 10 students and teachers. You will be posed with a real life design challenge and lead through the design process to ideate and present possible solutions.

Moonbase – Designing to Survive and Thrive

ARC Centre of Excellence for Plants for Space

The ARC Centre of Excellence for Plants for Space aims to create on-demand, zero-waste, high-efficiency plants and plant products to address grand challenges in sustainability for Space and on Earth. If humanity is going to be exploring the universe, then we will need to reimagine plants, food, and farming.

In this design sprint session, you will explore the challenges of growing plants in space and come up with possible ways to grow plants to supply the foods, materials and medicines humans need to survive. Not just for survival but in ways that support happiness and mental health, and sustainable farming on Earth.

Suitable for Year 4 to 10 students and teachers

Design Solutions via LEGO and App Prototyping

Doncaster Secondary College

Prototyping is the stage where designers and engineers create early, inexpensive, and scaled-down versions of a product or service to test and refine ideas. These prototypes are used to bring ideas to life, test the practicability of the design, and investigate how users might interact with and react to the product.

In this hands-on workshop you will explore two hands-on approaches to help prototype your design solutions after engaging in Design Thinking.

- LEGO Prototyping: A tactile and engaging way for you to rapidly prototype physical solutions, visualise concepts, and iterate on your designs.
- App Prototyping with Figma: A beginner-friendly method to create digital prototypes using Figma, allowing you to design app interfaces without coding.

The session will include practical strategies, classroom applications, and ways to integrate prototyping into different learning areas.

Suitable for Year 4 to 10 students and teachers

STEM for Wildlife Conservation

Zoos Victoria

In the realm of wildlife conservation, technological advancements are crucial for safeguarding threatened species. Examples of current technologies used in wildlife conservation include automatic feeders, thermal and camera traps, geolocators, multi-sensor loggers, drones and radio trackers.

In this problem solver session, you will use design thinking to develop and design a prototype technology that can be used to help scientists locate, track and/or monitor some of our elusive endangered species. Come and discover how conservation scientists address complex technological challenges to look after Australia's wildlife.

Suitable for Year 5 to 10 students and teachers

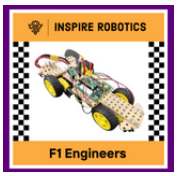
From Code to Control: Exploring Automation with Raspberry Pi

The University of Melbourne

Real-world automation encompasses the application of technology to automate repetitive, manual tasks to improve efficiency, accuracy, and productivity. Automation is used in a variety of sectors such as manufacturing (e.g. industrial robots assembling cars), business (e.g. automating data analysis), and daily life (e.g. thermostats, lighting and self-driving cars)

This hands-on workshop introduces you to microcontroller programming using CrowPi kits. You will explore real-world automation challenges, such as environmental monitoring or home automation, and design, code, and test your own engineering solutions using sensors, actuators, and Raspberry Pi-based interfaces.

Suitable for Year 7 to 10 students and teachers



F1 Engineers & the Future of EVs

Inspire Robotics

F1 racing is more than a high-speed race — it is shaping the future of electric vehicles.

In this workshop, you will become real-world race engineers, designing and testing remote control race cars inspired by modern F1 engineering. You will explore aerodynamics, mass and inertia, how electricity compares to traditional fuel sources, and how energy can be conserved within a system. Learn how racing tech drives innovation in everyday EVs — and how you could engineer what is next!

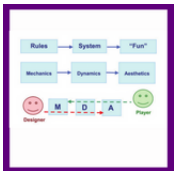
Suitable for Year 5 to 8 students and teachers

Designed by Nature: Innovating with Biomimicry

Royal Botanic Gardens Victoria

What if there was a design guide with real-life examples that were sustainable, good for the planet and accessible to everyone? There is! It's called Nature! Biomimicry is the practise of observing what works in nature and copying it to solve problems, create and innovate. This workshop will introduce you to, and learn the skills needed for this modern design practise. You will also be inspired by some of the most weirdly wonderful plants to bring nature's ideas to an innovative and sustainable biomimetic design concept.

Suitable for Year 4 to 10 students and teachers



Learn to Design Games: Mechanics, Dynamics, Aesthetics

Monash University

Gaming and digital experiences are a booming industry around the world with more than 2.3 billion active gamers contributing over $190 billion to the global games market. Have you ever wanted to find out how to design a game – here is your chance!

In this problem solver workshop, you will play games to learn game design! You will have the opportunity to craft new games from old parts and learn how to use Mechanics to make a game, how players experience those mechanics (the Dynamics), and how we get to Aesthetics (the desired emotional outcomes). This is a great way to apply all that STEM you are learning!

Suitable for Year 7 to 10 students and teachers

Invention Remix: Tools for an Unknown Future

Victorian Academy of Teaching and Leadership

For you to become the shapers of the future, as the theme of this conference indicates, you need to prepare for possible future changes and challenges by developing the skills, mindset, and adaptability to thrive in a dynamic world.

In this problem solver challenge, you will remix everyday craft materials to invent tools for the year 2125. With creativity and critical thinking, you'll solve unpredictable future problems and pitch your solutions like young entrepreneurs, engineers or storytellers. Imagination meets innovation!

Suitable for Year 4 to 8 students and teachers

Design for reuse – egg drop challenge

The University of Melbourne

Engineering design is about solving problems with technology, not just warnings, training or policy. In this task, the egg represents something fragile we want to protect with a technical solution – a human, an organ, or maybe eggs in a manufacturing plant. Past engineering practice has used a significant amount of energy and resources and almost nothing, whether wind turbines, medical devices, or hair dryers can be reused or even recycled at the end of its useful life. Current engineering is changing this.

In this problem solver session, you will tackle an updated version of the classic egg drop. You will be coached through an engineering design process, but the process is updated to match the needs for engineering to solve global challenges with less resources and create sustainable solutions that can be reused.

Suitable for Year 6 to 10 students and teachers

Sustainable Spaces

Monash Tech School

The future is here, and our climate is changing rapidly. Suburbs are flooding in Queensland and NSW while there are sustained droughts in Victoria and Western Australia. How can our homes be part of a sustainable solution?

Your mission is to use digital design technologies and hands-on manipulables to design and prototype a habitat or house which can withstand the effects of a changing climate. Step into the role of a designer and engineer to tackle this real-world problem and design a safer future.

Suitable for Year 5 to 9 students and teachers

Become a disease detective!

R-Ladies Melbourne

A mysterious disease is causing people to fall ill at your school. What are the common characteristics of the people that are ill (e.g. did they all eat the same thing)? What are the common symptoms of infected people? How can we stop the epidemic before it spreads throughout the whole school and beyond?

In this session you will learn about epidemiology and how medical teams use data to pinpoint the causes of a disease and come up with solutions to stop outbreaks. You will cover key concepts such as 'what is an outbreak' and 'what do epidemiologists do', as well as exploring concepts such as data visualisation and the importance of clear science communication.

Suitable for Year 7 to 10 students and teachers

Game on! Using tabletop games to plan and design video games

Australian STEM Video Game Challenge

Game developers turn game concepts into a playable reality. This is done by programming features, coding visual components, and testing models until the game is market ready.

In this problem solver session, you will learn about gameplay concepts and how tabletop games can be used to plan and design video games from these concepts. You will then have the opportunity to develop your very own tabletop game related to the 2026 STEM VGC theme that you can take home and play with family and friends. You can even use this as a resource to develop a video game to enter the STEM VGC!

Suitable for Year 4 to 10 students and teachers

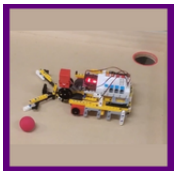
Tinker Tales

Wonder Bitz

Tinker Tales is an immersive, cross-curricular educational experience that intertwines the fun of board games, puzzle rooms, and interactive pick-your-path narratives with a touch of generative AI magic sprinkled in!

In this hands-on and fun workshop, you will be "Collectors" from the fantasy city of Wonder, where resources known as Bitz are tunnelled to the surface by underground (and adorable) mole-like creatures. Collectors embark on missions to collect rare Bitz and encounter challenges along the way. Teams must work collaboratively and creatively to solve in-game, hands-on STEM challenges using various Bitz (a combination of open-ended loose parts and building materials).

Suitable for Year 4 to 6 students and teachers



Fun Problem Solving with Lego Robots

AI Cubed Academy

Robotics school programs and competitions are all about how you can apply STEM principles in real-world applications. You may be constructing and programming robots to help tackle real-world issues such as environmental cleanup, rescue operations, and supporting individuals with impairments.

In this challenge, you and your team will upgrade a standard robot and program it to push as many balls as possible into set holes within a 1-minute time frame. Not only will you learn how to build and program a remote-controlled robot using a Micro:bit controller, but also gain valuable experience in iterative design as your team improves the robot's performance over multiple rounds. Can you score the most goals?

Suitable for Year 5 to 7 students and teachers

The conference theme ‘Adapt : Inspire – shaping the future’ will highlight how STEAM learning inspires people to dream, adapt to change and shape the future.

The 'It Takes a Spark! STEM Conference' on Thursday, 23rd October 2025 is a vibrant FULL-DAY of learning, connection, excitement, and imagination, designed by educators for students and teachers.

- **Engage** your students across the day with innovative hands-on STEAM learning. Inspiring new interests, further their ability to adapt, and shape their future now!
- **Students and teachers** participate in three rotations of pre-selected DigiDesign hands-on workshops, including the STEAM Expo activities, and Problem Solver Design Challenges.
- **Teachers** can also tap into the latest developments, innovations, tips, and tools in STEAM from experts and practitioners.
- **Professional Development stream** includes **Teacher Mini-Master classes,** gaining access to a broad range of STEAM resources to implement back in the classroom.
- **Two** inspiring Keynote speakers connecting to a broad range of listeners.
- Time to effectively **network and collaborate** with other school, educators and industry experts, and gain insight into their STEAM activities and programs.

Flow of the day....

*Listed program is subject to change

8.15am	Sign-in, coffee and networking
8.45am	Master of Ceremonies - Welcome, set up for the day and housekeeping
9.00am	**KEYNOTE SPEAKER**
9.40am	**ROTATION ONE - 40 minute parallel sessions**
	>> Teacher only Mini-Master Classes
	>> Student and/or Teacher DigiDesign hands-on workshops & STEAM Expo
10.25am	**MORNING TEA** - An opportunity to network with other teachers and students, and explore EXPO
11.00am	**ROTATION TWO - 80 minute parallel sessions**
	>> Problem Solver Design Challenges for Year 4 to 10 students and teachers
11.00am	**ROTATION TWO - Teacher Alternate session**
	>> Teacher Mini-Master Classes (80 minute parallel sessions)
	>> Teacher Networking and STEM Pathways session
	◦ Opportunity to connect with other teachers and presenters to share ideas, possibilities and practices. Meet with the sponsors in the STEAM Expo area to discuss (without students) how they can support you in delivering and inspiring STEAM in your school
12.25pm	**LUNCH** - An opportunity to network with other teachers and students, and explore EXPO
1.00pm	**KEYNOTE SPEAKER**
1.40pm	**ROTATION THREE - 40 minute parallel sessions**
	>> Teacher only Mini-Master Classes
	>> Student and/or Teacher DigiDesign hands-on workshops & STEAM Expo
2.30pm	**FEEDBACK AND CONFERENCE COMPLETION**
	>> Awarding of prizes to attendees
	>> Completion of feedback form
2.45pm	**CLOSE OF THE CONFERENCE**

Who the conference is for...

- **Year 4 to 10 students** - those who are already (or aspire to be) STEM Leaders in your school OR students’ schools wish to spark an interest in, and engagement in STEM
- **Teachers** - those who have little experience and those who have a lot, looking to be inspired, participate in hands-on professional learning and network with peers
- **Heads of Learning Areas / Curriculum** - who wish to connect and elevate their STEM discipline
- **Principals and Deputy Principals** - to witness what is possible by embedding STEM authentically in your school
- ...and the event is a 6 hour Professional Learning day for teachers - **certificate provided**

Further information

In 2025 the It Takes a Spark STEM Conferences are being held in a Western Australia, Victoria and Queensland.
FAQ’s, Impact, Media and News appearances can be found on our website.

Registration

- Educator / Teacher: Early bird $205.00
- Regular fee $245.00
- Teacher presenter: complimentary*
- Pre-service, Aide/Support staff, Homeschool educator: Early bird $79.00
- Regular fee $99.00
- Student: Early bird $30.00
- Regular fee $35.00
- Student presenter: $27.50*
- **T&C’s apply.*
- Scholarship may be available upon application

Inclusions, Hold Places, Early bird

Begins at 8.45am / completes at 2.45pm
Early bird registration is recommended **closing** Friday, 19/09/2025
Book Now or Hold places: you can hold early-bird places whilst you gain approval. Complete the Registration form and select ‘hold place’.

Teachers can attend without students.
Students must attend with their teachers.
Excursion pack available
Morning tea and Lunch included for **students and teachers**.

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Host School

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Spark STEM Conferences

It Takes a Spark STEM Conference Victoria
Thursday 23rd October 2025
spark-educonferences.com.au/victoria-spark-2025/