It Takes a Spark!
STEM Conference

Have an idea? Let's talk...
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Workshop Outline for Industry / University / Organisation

The It Takes a Spark! STEM Conferences were created by Dr Adrian Bertolini and Rachel Manneke-Jones from Intuyu Consulting, an Education Professional Learning provider. As people who have backgrounds in engineering, science, community outreach and having worked to address social justice issues in society, they are passionate about developing young people to make a difference to their future.

The intent of the 'It Takes a Spark! STEM' conferences are to inspire students and teachers to experience what is possible in Science, Technology, Engineering and Maths and to support them to collaboratively develop authentic STEM learning and pathways in their schools. Industry, TAFEs, universities, and STEM-based organisations have a big part to play in showcasing the potential of STEM and linking learning to real-world practice.

The conferences have four opportunities for industry, TAFEs, universities, and STEM-based organisations to be involved in authentic and practical ways.

>> Present a Digidesign Session <<



- Depending on the conference agenda, these 45 or 50 minute hands-on workshops are on a specific topic.
- They are for students (year 4 to 10) and their teachers to attend. Often the mix is 90% students and 10% teachers and the idea is to have the attendees actively participating in a hands-on STEM experience.
- We believe that when attendees experience real-world STEM they develop a deeper understanding of what it is and how interesting it can be.
- The activities can almost be on any topic as long as it draws out the knowledge, or skills or thinking that STEM develops.
- In the past we have had organisations run short mini-drone challenges, design sprints on problems they have faced, paper prototyping,
- virtual reality use in your industry, marine science, environmental challenges, an engineering or science principle, mathematical activity, and so on.
- There are generally two rotations of DigiDesign sessions across the day depending on the conference agenda.
- You can target sessions towards primary students (year 4 to 6), secondary (year 7 to 10) or a mixture of both primary and secondary. Typically there are 20-25 attendees in a session.

>> STEM Expo <<



- The Expo is set up within a large room, hall or gym and generally runs at the same time as the DigiDesign and Teacher Mini-Master Class sessions. The overall length of the session is 45 or 50 minutes depending on the conference agenda.
- Attendees often choose the Expo so they can experience a wide range of hands-on activities that are shorter in length (5 to 15 minute). The attendees move around the Expo sampling the different activities, talking to the people at the activities, and learning about the breadth of practical STEM.
- You can use the Expo as an opportunity to connect with students and teachers, showcase what you do, how it relates to STEM, and the pathway they could take to become involved in that area. In the past, organisations have showcased ultrasonic inspections, construction engineering, VR site tours, pharmacy in action, biscuit mining, and using drones in real-world industry.
- The best Expo activities are hands-on and entice students and teachers to interact and talk with the people at the display. It is also a good opportunity for engineers, scientists, and mathematicians from the organisation to talk to students about their journey and what they do.
- The Expo area is often open to all the attendees during morning tea and lunch time.

>> Lead a Problem Solver Session <<



- These are hands-on design challenges which take the attendees on a journey to solve a real-world problem. The length of the session is 70 minutes.
- The aim is to deepen student and teacher understanding of how real-world problems and challenges are **thought** through. Design and scientific thinking are often not well delivered in schools and these challenges are an opportunity for students AND teachers to experience the process.
- Examples of past design challenges have been on topics as diverse as: the energy transition in industry; protecting sensitive species from the impact of construction; science / engineering design in structural and sound engineering; protecting eggs from impacts; creating mini-scale underwater structures; dealing with batteries at a recycle facility; game design; choose the best route for a subsea pipeline; building catapults; coding a drone route to meet a goal, and many more.
- Organisations that run STEM outreach programs value the problem solver session because it provides an opportunity to showcase what their programs look like in schools.

>> Present a Teacher Mini-Master Class <<



- Teacher Mini-Master Classes are 45, 50 or 70 minute hands-on sessions. They are an opportunity for sponsoring organisations to share their great STEM and entrepreneurial activities and ideas with teachers.
- The session could address teachers/schools who are at the beginning, next or extending step of their STEM journey. If you are thinking about showcasing a particular product, the session must be hands-on for participants and demonstrate its application in the classroom with links to the curriculum.
- In our experience the workshops teachers want will show them **how** to practically deliver particular STEM-oriented or entrepreneurship initiatives in their school, and how it is linked to the curriculum. The expectation is handouts and resources are provided for teachers to support them after the conference. This could include interactive lesson examples.
- Past successful workshops include topics such as: Upgrading your programming sessions with drones; Encouraging inquiry with the Internet of Things; Using your PASCO (and other data logging) gear to extend STEM in the science classroom; Running engaging Arduino projects; Leading and assessing STEAM learning; Cyber Teacher – starting up in cybersecurity, and so on.
- We accept a limited number of Teacher Mini-Master Class sessions. We have found that by having teachers participate in sessions where students are participating actually demonstrates the value of STEM activity better. We also realise that some workshops are better and preferred for teachers only!
- Each Teacher Mini-Master Class submission is reviewed by the conference steering committee to assess the potential level of interest in that topic by teachers and its relevance to the conference.
- There are generally two rotations, with some conferences having a third rotation of 70 minutes. They run concurrent to the DigiDesign, Expo, or Problem Solvers session. Typically there are 5 to 15 teachers in a session. Target to Primary, Secondary or both.

Further opportunities to impact STEM learning

>> Further opportunity <<

Each location has a slightly different flow and may include a specifically designed session for teachers to connect and network with representatives from sponsors, universities, industry, and STEM organisations. The intention is to explore and discuss the latest STEM programs and pathway possibilities that schools can connect to. If this session is running in your chosen location we will invite you to participate.

>> Shape the Future—Partner with Us as a Sponsor!

We invite your **university, organisation, or start-up to play a vital role** in the future of STEM learning, particularly for low socio-economic & regional students.

Your financial support ensures that the *It Takes a Spark STEM Conferences* remain accessible to schools from all socio-economic communities — keeping fees low and opportunities high.

Through your sponsorship, you'll be **investing in the future of STEM education** while showcasing your organisation's commitment to innovation, diversity, and community impact.

A Proven National Impact

In **2027** three It Takes a Spark STEM Conferences will take place across Australia. Each event is hosted by a passionate school community and supported by local steering committees of leading educators from Government, Catholic, and Independent sectors.

Past sponsors have included respected organisations such as:



We invite you to get in touch with us...

Do you have any questions? Want to discuss a potential activity? Or you want to find out more about sponsorship and associated promotion of your organisation.

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2027 | It Takes a Spark! STEM Conference

QUEENSLAND	WESTERN AUSTRALIA	VICTORIA
Thursday 24 June	Thursday 23 Sept	Thursday 21 Oct

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