It Takes a Spark!
STEM Conference

Have an idea? Let's talk...
Dr Adrian Bertolini
E: adrian@spark-educonferences.com.au
Call: +61 (0) 413 036 382

Workshop Outline for Schools

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.

Schools have a lot to share with one another and we encourage presentations from schools across all educational sectors. When students and teachers see hands-on STEM activities and learning from other students and teachers it ignites a deeper connection to what is possible for themselves and their school. **Students who present** become aware that they are capable of answering questions, sharing their understanding and being STEM experts. Teachers love seeing hands-on activities and approaches that **has worked in other schools** because it showcases what they could do in their own school.

The conferences have four opportunities for students and teachers to present.

>> Presenting a Digidesign Session <<

- These are 40 to 45 minute hands-on workshops for students (year 4 to 10) and their teachers on specific topic. 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 schools run Rube Goldberg design challenges, virtual escape rooms, hands-on cryptography, mystery box challenges, environmental challenges, biomimicry investigation, an engineering or science principle, art or mathematical activity, and so on.
- There are generally two rotations of Digidesign sessions across the day: one in the morning (9.40am), and one in afternoon (1.40pm).
- 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. 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.
- Schools can use the Expo as an opportunity for their students to showcase some of the short hands-on STEM activities and projects they run at their school. Past examples include, problem-based STEM learning projects; the hidden language of emoji using micro:bits; SUBS in schools; Multimedia Microscopy; First Lego League; melting metal momentos; using of chromatography in forensics; household engineering; 3D fashion; STEMPower–from concept to reality; and many more.
- The best Expo activities are hands-on and entice students and teachers to interact and talk with the people at the display.
- 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.
- In the past, schools have delivered design challenges on topics as diverse as... United Nation sustainability goals; Determining the eccentricity of the Earth's orbit; Half and half bridge design; Egg drop challenges; Paper structural engineering; Picture book engineering; Catapult carnage; Minecraft STEAM challenge; Using Lego to prototype & test a real bridge, and Formula CD Racing.
- 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.
- The aim is that attending teachers and students can experience how they could go about being involved in real-world design challenges in their own schools.

>> Present a Teacher Mini-Master Class <<

- Teacher Mini-Master Classes are 40 or 70 minute hands-on sessions which are an opportunity for teachers (and students) to share their great STEM and entrepreneurial activities and ideas with other teachers. The session could address teachers/schools who are at the beginning, next or extending step of their STEM journey.
- 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: Leading and assessing STEAM learning, Setting up a coding and robotics program in your primary school, Connecting the dots – making learning real in Middle Years through STEM, Cyber Teacher – starting up in cybersecurity, STEAMpunk Adventures – Take your students on a tailored journey around the world, Setting up effective STEM learning in your school, 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 it's relevance to the conference theme.
- There are generally two rotations, with some conferences having a third rotation of 70 to 80 minutes. They run concurrent to the DigiDesign, Expo, or Problem Solvers session. Typically there are 5 to 25 teachers in a session. Target to Primary, Secondary or both.

Advantages to presenting at the It Takes a Spark! STEM Conference

>> Attend workshops <<

When you are NOT presenting you will be attending preselected workshops across the day, including keynote speakers.

>> Acknowledgement <<

> Students who present at the conference will receive a small thank you gift and a certificate of acknowledgement.
> School name on the conference website to show family, colleagues, and friends.
> Share your expertise and connect with like-minded teachers.
> Gain recognition from peers and potential collaborations.

>> Registration <<

~ Receive complimentary registration for up to 2 Teacher presenters.
~ The registration for students presenting is reduced and not subject to early bird/normal rates.
~ The registration for non-presenting teachers and students registration is at the early bird/normal rates.
~ Morning tea and/or Light lunch included.

Schools who presented in 2025 include...

Northam Senior High School
Mount Barker Community College
John Curtin College of the Arts
Al-Ameen College
Gwynne Park Primary School
Perth College
Peter Carnley Anglican Community School
Greenfields Primary School
Dale Christian School
School of Isolated and Distance Education
Laverton School (remote WA)
Gilmore College
Doncaster Secondary College
The Knox School
Rangeview Intermediate School, New Zealand
St Peter Julian Eymard Primary School
Flinders Christian Community College
Orchard Grove Primary School
Eltham Primary School
Cranbourne West Primary School
Scenic Shores State School
Islamic College of Brisbane
St Ursula's College Toowoomba
Assumption College Warwick
Brisbane South State Secondary College
Beenleigh State High School
Ormiston State School

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

Do you have any questions? Want to discuss a potential activity / workshop?

Contact Dr Adrian Bertolini - Conference Coordinator and Founder
E: **adrian@spark-educonferences.com.au**
M: **+61 (0) 413 036 382** (Melbourne based)
Alternatively connect with Rachel Manneke-Jones - Event and Business Manager
E: rachel@spark-educonferences.com.au
M: +61 (0) 411 270 277 (Melbourne based)