It Takes a Spark!
EDU Conference

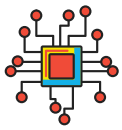
Friday 27 November 2020 | PERTH

The intent of each Conference is to bring together teachers and students with inspiring role models, industry innovators and universities for an immersive day of interactive STEM workshops. This is a unique learning opportunity to present at a conference designed and led by students and teachers for students and teachers.

2020 Theme: Becoming Confident and Empowered STEM Learners – shaping the world

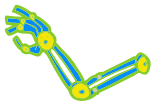
Teacher PD workshops from leading STEM experts, teachers and students on topics as diverse as

>> Cyber Teacher – Starting Up in Cyber Security
>> How Educational Neuroscience Makes Teaching & Learning Easier, Enjoyable, Engaging & Effective!
>> Aquaponics – not just a vegie patch!



Hands-on sessions for students and teachers, examples

>> Design a Playground: Minecraft Architecture
>> Ethical Hacking with Capture the Flag Cybersecurity Challenges
>> Creating, Coding and Co-Spaces VR
>> Build and Race a Solar Car
>> The Global Goals Escape Room
>> Cool Competitive Coding
>> Amazing Native Plants
>> Data Science: The "Truth" is out there!
>> Financial Lit-eracy for Gangstaz
>> CoSpaces and Virtual Reality in Science



Problem Solvers Sessions, including....

>> Pipeline STEM Challenge
>> The Gift of Concrete!
>> Green Lab Challenge
>> The SOLE of STEM

Plus many more....

Outstanding Keynote Speakers

DR NATASHA HURLEY-WALKER

International Centre of Radio Astronomy Research

Dr Natasha Hurley-Walker has been working with a new radio telescope in outback Western Australia to create a map of the entire sky. Her radio images allow you to see not just our solar system, or our own Milky Way, but some of the most distant objects in the Universe: supermassive black holes emitting cosmic jets into space billions of light years away. She is a passionate science communicator and has spoken at many WA outreach events, radio and TV and was named one of the ABC's Top 5 Scientists for 2018.

DR HEIDI PASS

Gold Fields Australia

Dr Heidi Pass is a keen speaker, a passionate leader and inspiring pioneer and STEM role model. One of two women globally to achieve the role of Chief Geochemist at a major mining company, she uses her analytical mind, ore deposit knowledge and natural curiosity to unlock the Earth's secrets in the search for gold deposits. Heidi's adventurous spirit has taken her from the Arctic wilderness to the rugged Australian Outback and most recently Antarctica, as part of the largest ever expedition of women to the frozen continent. She has a love of Latin dancing and often has beach sand between her toes.

MORE INFORMATION: spark-educonferences.com.au/it-takes-a-spark-perth-2020/

Contact

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Hosted by

ALL SAINTS' COLLEGE

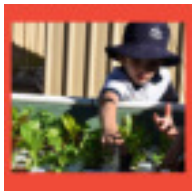
TEACHER MINI-MASTER CLASSES

40 min parallel sessions held across 2 rotations - 3 per rotation

*Listed program is subject to change

Aquaponics – not just a vegie patch!

Cat Donnelly, All Saints' College



How can schools' model alternative ways of producing food in a changing climate?
Come for a tour of our sustainable food production area and be introduced to aquaponics and wicking beds as scalable methods of teaching the curriculum while growing delicious food (and edible fish) in the Perth climate. This tour aims to inspire educators to think beyond the vegie patch and explore the many links with curriculum and community that a shared space like this can provide. All your questions will be answered!

School / teacher stages: Beginner, Next Step & Extending
Suitable for Primary & Secondary Teacher

Practical Strategies for Developing STEM Learners

Johanna Stalley, STEM Learning Project - SciTech

Often when teachers first discuss STEM they focus on the content and the technology. Rarely do they focus on the pedagogy of leading STEM learning. This workshop, run by Scitech STEM Learning Project's Jo Stalley, will use a problem-based learning activity to demonstrate how teachers can use collaborative learning, reflective practice and higher-order thinking and reasoning questions to empower a STEM mindset in students.

School / teacher stages: Beginner
Suitable for Primary & Secondary Teacher

Cyber Teacher - Starting Up in Cyber Security

Donna Buckley & Elliot Rosignoli, John Curtin College of the Arts

Cybersecurity has become a have-to-know topic in the world. Mainly this is due to the increasing cyberattacks that are occurring – both at the state and individual level.
This Mini-Master Class aims to build foundational understanding of this complex field, enabling teachers to effectively communicate to students about cyber security topics and facilitate student learning programs in the classroom. Teachers will walk away with a baseline understanding of the cyber security ecosystem in Australia, and be equipped with classroom-ready curriculum and resources to teach students.

School / teacher stages: Beginner, Next Step & Extending
Suitable for Secondary Teacher

How Educational Neuroscience Makes Teaching & Learning Easier, Enjoyable, Engaging & Effective!

Tammy-Anne Caldwell & Todd Budden, Above & Beyond Education

The research is clear; student education is enhanced by teachers, students and parents having a clear understanding of brain-science - and using this understanding in their daily teaching & learning practices. In this workshop we will cover the fundamental basics of how a student's brain works, grows and learns best. We will also explore how a school-wide brain-based approach to education can boost student well-being & academic success, improve pedagogical practices and staff well-being, and engage parents as effective partners in their children's learning journey.
These workshops link to the Australian Student Wellbeing Framework, Focus 2020 & ACARA's Personal and Social Capabilities, as well as connecting with STEM, PBS, SEL, PERMA, Pos Ed, Visible Learning & Growth-Mindset.

School / teacher stages: Beginner, Next Step & Extending
Suitable for Primary & Secondary Teacher

How to run a STEAM project in 8 lessons

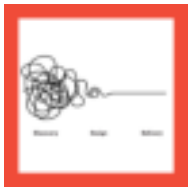
Anne Dinh & Helen Walker, St Hilda's Anglican School for Girls

STEAM projects are often not attempted because of time and resource limitations. This workshop demonstrates how a STEAM project has been successfully facilitated in just 8 lessons using materials readily available. We have been running the program at our school for 3 years, using topical contexts. In the past, students have reinvented rubbish into something that helps conserve water or keep our waterways clean. In 2020, solutions to problems encountered during corona virus restrictions were developed. This workshop would be applicable to upper primary and lower secondary levels.

School / teacher stages: Beginner & Next Step
Suitable for Upper Primary & Lower Secondary Teacher

Design Process Foundations

Sarah Hill and Students, Yidarra Catholic Primary School



Have you ever wondered why some students are better at design challenges than others? What causes them to be more successful and how can you build those skills for all of your students?
In this teacher workshop you will experience the Design Process through a hands-on design activity. We will :-

- Establish how to define the problem and investigate possible solutions,
- Work through designing a solution and obtaining feedback,
- Create a rapid prototype of the design,
- Document our findings and reflections,
- Evaluate the process and develop next steps

Teachers will be provided with a Design Process road map what can be adapted to an assortment of different projects, and practical tips and tricks to help ensure success when implementing Design Technologies in class.

School / teacher stages: Beginner
Suitable for Primary Teacher

STUDENT / TEACHER DIGI-DESIGN MINI WORKSHOPS

40 min parallel sessions held across 2 rotations
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Design a Playground: Minecraft Architecture

Joshua Jardine, Laura Yeoh and students, Willetton Primary School

Participants will explore how Minecraft can be used to design and create a prototype for a new school playground at their school Students will interactively take participants through the school's "SPARK" design process explaining the thinking and design choices made. Participants will discuss the needs of the clients, take a tour of the Willetton PS playground designs and then have the opportunity to begin building their own playgrounds to become more familiar with the Minecraft platform.

Suitable for Year 4 to 6 Student / Teacher

Creating, Coding and Co-Spaces VR

Year 7 students and Marianne Beattie, All Saints' College

Would you like to see your coding creation come to life?
We are in the middle of a technology explosion. The expectation is that we will need to become techno savvy in many different areas. We all need to become unafraid of using technology as well as being innovative with the tools.
In this workshop Year 7 students will demonstrate and allow hands on participation in an easy to use coding software program that can be viewed using virtual reality headsets. Virtual Reality and creating virtual worlds help students to use higher level thinking skills as well as being engaged.

Suitable for Year 5 to 7 Student / Teacher

Build and Race a Solar Car

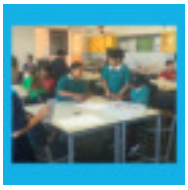
Year 8 students, All Saints' College

Take a step into the future of transport! This hands-on session will introduce basic circuit building and using solar power to drive a car. Participants will have a go at building and racing a solar car using readily available materials.

Suitable for Year 4 to 8 Student / Teacher

Engineering Design – Using Hydraulics Kits to Promote Critical Thinking and Investigation

Year 9 & 10 students, Joseph Banks Secondary College



The engineering design process is a common series of steps that engineers use in creating products and processes. In this hands-on workshop participants will make use of hydraulic kits to design and build devices to achieve a specific goal. They will be supported in the design process and critically thinking through how to combine components they have already built and/or produce new components in order to achieve their goal. This fun workshop will show you how maths, science and engineering are applied in real life.

Suitable for Year 4 to 7 Student / Teacher

Financial Lit-eracy for Gangstaz

Kareem Rouda and students, Ashdale Secondary College

Make it rain!
This student and teacher session will help sharpen your financial literacy skills so you can get ahead financially and make bank! The session also showcases an innovative teaching strategy that utilizes rap to engage students. Get rich or cry trying!

Suitable for Year 7 to 10 Student / Teacher

Invention Test!

Year 5 students & Karen Donnelly, St Hilda's Anglican School for Girls

Invention is the act of bringing ideas or objects together in a novel way to create something that did not exist before. In this session you will work with Little Bits electronic kits, LEGO and junk modelling materials to do exactly that!
Lead by year 5 students from St Hilda's Anglican School for Girls, you will;

- Solve a problem
- Be creative
- Build a prototype
- Pitch your idea
- Collaborate

And create inventions from your ideas!

Suitable for Year 4 to 6 Student / Teacher

The Elevator Pitch – An introduction to Design Thinking

Marianne Beattie and Cat Donnelly, All Saints' College

Design thinking is a non-linear, iterative process that teams use to understand problems, challenge assumptions, redefine problems and create innovative solutions. The process is at the heart of all creativity and innovation. This session is for both students and teachers who want to develop a deeper understanding and build their confidence in using Design Thinking. Work collaboratively with other participants using the design process to identify, understand and propose solutions to a problem that sparks interest to you.

Suitable for Year 4 to 8 Student / Teacher

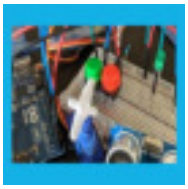
STUDENT / TEACHER DIGI-DESIGN MINI WORKSHOPS

40 min parallel sessions held across 2 rotations
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Arduino in the Classroom

Year 6 students & Sheree Pudney, CSIRO STEM Professionals in Schools Partner, St Hilda's Anglican School for Girls



Arduino is an easy to use electronics platform. Year 6 students have been building and experimenting with Arduino circuits as part of their STEAM classes. They will introduce you to the Arduino and help you build and code simple circuits that we use in our everyday lives.

Suitable for Year 5 to 8 Student / Teacher

Ethical Hacking with Capture the Flag Cybersecurity Challenges (Senior)

Kerrie Beech and students, All Saints' College

In this digital age, there is a lot of focus on educating children on how to be safe on the internet. However teaching cybersafety is only part of the solution. We should also be teaching cyber security. If students understand how hackers can access their system or exploit any vulnerabilities, it will help them understand how to increase their own online security.
Through a series of hands-on online, interactive challenges participants will be introduced to the 3 main areas of Cyber Security. These are: Digital Forensics, Penetration Testing and Information Security. They will be introduced to several online cybersecurity challenges sites, which will provide an introduction to the stimulating world of Capture the Flag cyber challenges.

Suitable for Year 8 to 10 Student / Teacher

The Global Goals Escape Room

Year 7 Students, Alexandra Myer & Jeanette Steers, Bob Hawke College

The year is 2030 and the planet has suffered the dire consequences of continued inaction on climate change, social development and sustainable solutions. Natural disasters, plagues, water scarcity, and inequalities continue to rampage the planet.
Will you accept the challenge?
Students will be part of a specialised task force team who must work collaboratively to solve the interactive puzzles of the 17 Global Goals to save the planet and unlock the video from the United Nations from the future. Students who successfully escape will receive a certificate. Teachers will be given the planning documents to run this at their own school.

Suitable for Year 4 to 6 Student / Teacher

Amazing Native Plants

Sarah Hill and students, Yidarra Catholic Primary School

Explore how our students combined STEM and HASS to develop an entrepreneurial project to promote planting native plants in their community.
Features of the unit include:

- Design process for planter containers using recycled materials.
- Using sensors to create the perfect nursery for the plants.
- Research skills to uncover the history and traditional uses for plants native to our school.
- Presentation and design skills to promote the seedlings to the community for purchasing.

Suitable for Year 5 to 8 Student / Teacher

Cool Competitive Coding

Vinitha Lobo, St Hilda's Anglican School for Girls

Python is a powerful, easy-to-read, high-level programming language. Commands read like English words and learners are able to write lines of code in far fewer steps than other programming languages. Coding helps with communication, creativity, mathematics, writing and confidence. Python also meets the Australian Curriculum requirements for Year 8 – 10 digital technologies.
In this workshop small teams will learn the basics of Python and then participate in some fun competitions using their new understandings. You'll discover that coding can be cool!

Suitable for Year 7 to 10 Student / Teacher

eV Challenge

Clay Woolcock and students, Comet Bay College

Australia's longest running electric motorsport event, the eV Challenge tasks students with investigations, designing, building, testing and racing a small, single seat electric vehicle. Built to a limited budget and using a common battery, teams are challenged to design and build a vehicle to complete as many laps of a circuit as possible in 1 hour.
The eV Challenge provides a real-world project STEM project with direct links to current and future trends in electric mobility. Come along and find out about this challenge and experience a small engineering activity that demonstrates some of the design thinking and work that students go through.

Suitable for Year 7 to 10 Student / Teacher

The Secret Science of Cryptography

Donna Buckley and students, John Curtin College of the Arts

The battle between code makers and code breakers goes back thousands of years and is of even greater importance to the security of information in our technological age.
In this workshop you learn the basics of cryptography and will apply deciphering techniques to crack secret messages.
This workshop will provide you with the foundational knowledge and skills that could lead you to a career in cybersecurity

Suitable for Year 4 to 10 Student / Teacher

STUDENT / TEACHER DIGI-DESIGN MINI WORKSHOPS

40 min parallel sessions held across 2 rotations
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Cybersecure, not just Cybersafe (Junior) – Using puzzles to hack the system and increase knowledge of cybersecurity

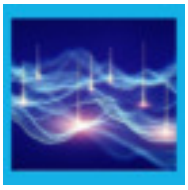
Kerrie Beech and students, All Saints' College

In this digital age, there is a lot of focus on educating children on how to be safe on the internet. However teaching cybersafety is only part of the solution. We should also be teaching cyber security. If students understand how hackers can access their system or exploit any vulnerabilities, it will help them understand how to increase their own online security.
Through a series of hands-on online, interactive challenges participants will be required to identify and exploit weaknesses in passwords, create passwords that cannot be hacked by the “online hacker”, compare and identify phishing scams and break down problems into sequential steps to reverse engineer some problems.

Suitable for Year 5 to 7 Student / Teacher

Data Science: The “Truth” is out there!

Courtney Weaver, Carine Senior High School



In a world increasingly guided by opinion and “fake news”, sometimes we need to look at the cold, hard facts. Sometimes the facts surprise us and cause us to generate further questions that encourage deeper research.
In this hands-on workshop, we will apply practical data science skills to look at an environmental issue in the Kimberley region of WA. Be amazed at how you can extract meaningful information out of large datasets simply using MS Excel. Learn how to use what you are learning to ask deeper questions and find the “truth that is out there”
Teachers will leave with prepared resources, datasets and assessment tasks which are ready to go.

Suitable for Year 6 to 8 Student / Teacher

STEM: From school to the real world

Nick Coplin, KodeKlix

Have you ever wondered …
How does my automatic night light work?
How does my TV remote change channels?
How does the reversing sensor on my family car know when to beep?
How does a volume knob turn my music up and down?
How does a solar light know when to come on?
How does an air conditioner know when to turn off?
How does a electric fan change speeds?
Presented by Nick Coplin, an engineer, innovator, and parent, this workshop will take teachers and students through the technology design process to understand how things work in the real world. The workshop will also give you a chance to have a hands experience with the amazing KodeKLIX kit and resources.

Suitable for Year 5 to 8 Student / Teacher

Little J’s Playground

Students and Teachers, Presbyterian Ladies College: Junior School

‘Creativity can be used to extend our thinking and express ideas’ was the central idea for our inquiry based unit of work, integrating STEM, Art and Literacy. The PLC students used the Stanford D Design Thinking process to design, prototype and then build a scale model of a playground for a fictional character called Little J.
In this workshop the PLC students will guide participants through this human-centred design process. Participants would then be encouraged to create and innovate an ‘It Takes A Spark!’ original piece of equipment using a range of natural materials to complement the existing Little J playground.
Oh The Places We’ll Go!

Suitable for Year 4 to 6 Student / Teacher

CoSpaces and Virtual Reality in Science

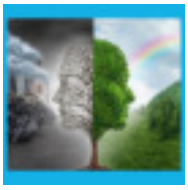
Year 9 students and Renae Jackson, Ashdale Secondary College

Come along and let students teach you how they created their own virtual reality worlds of the nervous system in a program called CoSpaces. Learn how you can learn about Science and immerse yourself using our Oculus Go headsets.
You can have a go coding your own virtual worlds using CoSpaces and view these on the headsets as well!

Suitable for Year 7 to 10 Student / Teacher

There is No Planet B (Secondary)

Lacey Filipich, Maker Kids Club



Waste and pollution are huge problems in our society. We can wait, and wait, and wait for others to come up with viable solutions. However young people are clever in many ways that adults are not. In this mini-hackathon you will begin by thinking of a waste or pollution problem you’ve seen in Perth, possibly even at your school. You will then be taken through a process to come up with a unique business idea to solve that problem in a financially sustainable way.

Suitable for Year 7 to 10 Student / Teacher

STUDENT / TEACHER DIGI-DESIGN MINI WORKSHOPS

40 min parallel sessions held across 2 rotations
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Virtual Reality: Beyond the Headset

Kay Hargreaves and Courtney Carr, Women In Technology WA

Virtual Reality (VR) is an exciting technology development, and one that is predicted to have a huge impact on future jobs. Women in Technology WA have developed an online learning module, and an activity component within their Techtrails schools incursions that explores how this technology is changing our world.
In this hands-on workshop, you will get a chance to explore a virtual world using Oculus Quest headsets and participate in a discussion around how this technology will be utilised now and into the future. With a focus on Future Skills this workshop will explore what skills are needed for a career in VR, the types of roles available in the extended reality industry, and how STEM subjects can open doors to future opportunities for your students.

Suitable for Year 8 to 10 Student / Teacher

Bike GP

Clay Woolcock and students, Comet Bay College

BikeGP tasks students with building a motorised bike in small groups which will be authentically evaluated in racing - against other groups from within the same school and at an interschool level. This project introduces and reinforces the design process by guiding students through the process of investigating, designing, producing, & evaluating a simple motorised bike. Students are able to modify an existing bike frame, or create a hybrid of parts from a number of bikes, or create a completely custom bike which meets the rules. Come along and find out about this project and experience a small engineering activity that demonstrates some of the design thinking and work that students go through.

Suitable for Year 8 to 10 Student / Teacher

STEM Expo Hands-on Activities

Open area with various presenters

STEM Outreach Program (Earth Science WA)

Showcasing Earth Science WA's free online earth science resources for teachers and students including hands-on activities, videos, apps and differentiated STEM projects. We will also be demonstrating the use of Ozobots in STEM problem solving through a short programming activity using coloured pens. **Suitable for Year 4 to 10**

Precious Plastic: how to design and make useful things with recycled plastic (All Saints' College + Microplastix)

This student-led demonstration will allow you to learn about Precious Plastic, a world-wide social enterprise aiming to tackle plastic pollution. Precious Plastic provides open-source machine designs that people can then use to recycle and repurpose plastic waste.
Participants will learn about plastic as a resource and then be able to have a hands-on chance to turn plastic waste into something beautiful and useful with the shredder, injection moulder and compression oven. Feel free to talk with the student presenters about your personal designs and projects! **Suitable for Year 4 to 8**

Kodeklix

KodeKLIX® is a fun, motivating and easy-to-use platform that allows children as young as eight to learn programming and electronics without traditional barriers of complex computer syntax or risk of burnt fingers from soldering wires together. Come along and check out the amazing things you can do! **Suitable for Year 4 to 8**

Backyard Solar Cars (All Saints' College)

Have you ever built a billy cart in your backyard? What about a solar car? Come and join a group of year 8 All Saints College students as they introduce you to the stages of how they built a solar car built using readily available materials. Attendees will have the opportunity to play with the car materials and interact with the students as they demonstrate the project. **Suitable for Year 4 to 8**

NXplorers (Lynwood Senior High School)

Students will be presenting their NXplorer project created during Scitech facilitated workshops run at their school. As part of this project the students will display a physical board game about littering (with a Micro:Bit dice) and a coded video game.
Come and have some fun playing the game, watch the video and learn about their design journey to creating the game and solve a problem. Attendees can take away pamphlets on how to code a game and how to program a Micro:Bit. **Suitable for Year 6 to 9**

Exploring VR and AR in a school (Ashdale Secondary)

Come along and have a play with different VR and AR technology and explore some of the software you can use to create content. Find out the challenges and successes it can lead to and ask questions.
Suitable for Year 4 to 10

Find Out How Your Brain Works and How You Can Make It Happier & Smarter!! (Above & Beyond Education

Come find out how your brain works, learns & grows. We'll use squishy red rubber brains, real sheep brains, light up transparent human-head models, pipe-cleaner neurons, a life-like model human brain, model lightning, videos & more. We will demonstrate some basics about how your own brain works, learns & grows, from a learning AND wellbeing perspective. We'll also explain why you can achieve better academically when you know this information. If time allows, you will get to create your own take-home 3D model brain out of playdough & googly eyes! **Suitable for Year 4 to 8**

Simple Machines (Yidarra Catholic PS)

Simple machines are the simplest mechanisms that use mechanical advantage (also called leverage) to multiply force. Come and explore the demonstration of simple machines created using resources commonly found in schools: cardboard, MicroBits, Lego and more!
Suitable for Year 5 to 8

Risky Business (Dunsborough PS + Robin McKean, CSER University of Adelaide)

When natural disasters strike, as inevitably they do, how can we design digital solutions to minimize risk? Would we create early warning systems? Data loggers for recording and transmitting information before, during, and after the event?
Come and see the Engineering prototypes that the students from Dunsborough Primary created when they used design thinking and STEM to make a range of innovative solutions for both the initial warning and recovery phase. Participants will have an opportunity to build and test simple prototypes using Micro:bits , LED lights and sensors that can do something awesome!! **Suitable for Year 4 to 7**

Project Utopia (All Saints' College)

What would it be like to live in Utopia?
Come along and discover how the Year 7 students from All Saints College used the design process from their InnovatED program, along with the UN Sustainable Development Goals, to create a Utopian community. Learn how their designed Utopia addresses liveability, town planning, indigenous affairs, sustainability, political development and people with disabilities. The Expo display will include several physical Utopias plus demonstrate the process the students went through. **Suitable for Year 6 to 9**

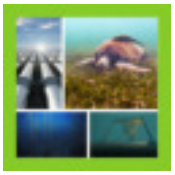
PROBLEM SOLVERS DESIGN CHALLENGE

80 minute parallel sessions
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Pipeline STEM Challenge

Cecily Arkell, Earth Science WA



Your challenge is to run a subsea pipeline to connect a gas platform to an onshore processing plant taking all environmental and stakeholder aspects into consideration. What is the best route for your pipeline to take? Which STEM professionals can you consult to help you? Find out more by accepting the challenge!
Suitable for Year 7 to 10

The Gift of Concrete!

Nathaniel Bolt, Wanneroo Secondary College

Concrete is a component that makes up the majority of infrastructure around the world. It makes buildings tall, yet strong, but can also be used for small and delicate tasks. Today your task is to make a gift for someone important to you using concrete, which may not be as simple as it sounds.
Suitable for Year 6 to 9

Green Lab Challenge

Catrina Luz Aniere, Dr Jana Sonderland and MK students, Millennium Kids Inc

Perth city has lost significant tree canopy with some suburbs having only 9% tree cover. With loss of biodiversity and the urban heat island effect on the minds of decision makers it time to solve the problem. Local governments are working with stakeholders to set a new agenda and develop targets to increase canopy by 2030 and we need Kids to help plan the future. Kids want to protect, monitor and increase canopy to cool the city. Teams will work together to create an urban canopy plan to be presented to key government stakeholders.
Suitable for Year 7 to 10

Designing for Global Equity

Kim Flintoff, Curtin University

RealLives is a gamified simulation that brings home the challenge of life in its many splendors and complexities. During this problem solver session you will experience life as someone born elsewhere in the world. The challenge you will face will be drawn from analysing the life you experience in the simulation and deciding on a factor that might improve the quality of life for the person in that situation. Learn what it really could take to make a difference to another person in the world.
Suitable for Year 7 to 10

The SOLE of STEM

Students from Beaconsfield Primary School

Young people can make the difference! In this session the students from Beaconsfield Primary will use the SOLE model (Student Organised Learning Environment) to guide participants through STEM processes to design solutions to problems that matter to them. Participants will be posed with 4 key framing “concepts” in which to identify problems – Biology, Place, Space & Sustainable practice. They will identify problems, brainstorm possible solutions, narrow their focus and design ideal outcomes while learning about what the Beaconsfield PS students have been doing in their own school. At the end of the SOLE session student leaders will invite each group (as they finish the task), to quickly present their brainstormed problems.
Suitable for Year 4 to 7

There is No Planet B (Primary)

Lacey Filipich, Maker Kids Club

Waste and pollution are huge problems in our society. We can wait, and wait, and wait for others to come up with viable solutions. However young people are clever in many ways that adults are not. In this mini-hackathon you will begin by thinking of a waste or pollution problem you’ve seen in Perth, possibly even at your school. You will then be taken through a process to come up with a unique business idea to solve that problem in a financially sustainable way.
Suitable for Year 4 to 6

Nexus Thinking (Food, Water, Energy, Waste)

Year 8 Students, Kimberley Annear & Nadene Claydon, Lynwood Senior High School

The United Nations sustainability goals have been created as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. In this Problem Solvers session a team of Year 8 students from Lynwood Senior HS will take you through a range of problem solving tools to come up with solutions that you will persuade others to consider. Suitable for Year 6 to 8

Coding drones to solve problems

Darryl Hunt, Mark Major and students, Rivervale PS

Attendees will be presented with real-life situations where they will work in teams to analyse the problems, come up with solutions and then code the solutions into a drone. The activity involves brainstorming how to overcome obstacles, solutions being coded in real time, and then tested. Modifications to the solution, if unsuccessful, will be made until the challenge is overcome.
Suitable for Year 4 to 6

PROBLEM SOLVERS DESIGN CHALLENGE

80 minute parallel sessions
Student (Year 4 to 10) and / or Teacher

*Listed program is subject to change

Around YOUR World in Eighty Minutes - A STEAMpunk Excursion

Gry Stene, STEAM Engine Global and Parkwood PS students

The STEAMpunk movement provides a wonderful backdrop for inspiring youth and educators to develop research skills, learn about history, engage in collaboration, and gain numerous other essential skills for 21st century learning. This session takes the participants on a fun and engaging learning by doing journey of discovering the world around them. Each team will find a problem in their environment or community within one of the following topics; health & wellness, environment & resource management, or social justice. The team will quickly brainstorm potential problems to solve, prioritise as a team, understand who has the problem and why it is a problem. All of this with a STEAMPunk flavour!
Suitable for Year 4 to 10

STEAM – Sounds That Electronic Artists Make

Drew Mayhills, Duncraig Senior High School

Are you planning on a music career and being the next Drake, The Weeknd or Mark Ronson? In that case a strong background in Science, Technology, Engineering, Arts and Mathematics (not to mention some business acumen) could really help towards realising that goal. The modern Digital Audio Workstation (DAW) - the hardware and software that enables these household names to produce their chart-topping tunes - is a complex system that demands as much musical ability and creative flair as it does digital literacy and scientific attention to detail. In this session you will need to bring along your own browser enabled device so you can learn the art of music making. Bring along your creativity, applied technology skills and self-expression and you might even get the chance to create some beats with Drew up on stage! Teachers - this is a great session to learn about creating engagement and relevance in music classrooms.
Suitable for Year 7 to 10

Flow of the day....

*Listed program is subject to change

8.15am	Arrive for Registration, coffee and networking
8.40am	Master of Ceremonies - Welcome, set up for the day and housekeeping
9.00am	**KEYNOTE SPEAKER - DR NATASHA HURLEY-WALKER**
9.40am	**ROTATION ONE - 40 min parallel sessions**
	>> Teacher Mini-Master Classes
	>> Student and/or Teacher DigiDesign Mini-Workshops and STEM Expo
10.25am	**MORNING TEA**
	An opportunity to network with other teachers and students, and explore trade displays
10.55am	**PROBLEM SOLVERS DESIGN CHALLENGE**
	>> 80 min session - parallel sessions for teachers and Year 4 to 10 students
12.20pm	**LUNCH -** An opportunity to network with other teachers and students, and explore trade displays
1.10pm	**KEYNOTE SPEAKER - DR HEIDI PASS**
1.50pm	**ROTATION TWO - 40 min parallel sessions**
	>> Teacher Mini-Master Classes
	>> Student and/or Teacher DigiDesign Mini-Workshops and STEM Expo
2.35pm	**WHERE TO FROM HERE?**
	>> Student session
	WHERE TO FROM HERE?
	>> Teacher session
3.05pm	**FEEDBACK AND CLOSE OF THE CONFERENCE**
	Fill in your feedback forms and be invited to be on the Steering Committee for next year.

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MORE INFORMATION: https://spark-educonferences.com.au/it-takes-a-spark-perth-2020/

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FAQ's + Booking information

Q. I'm a Primary School teacher - is this suitable for me?
A. Yes, the conference is suitable for students from Grade 4 through to Year 10 and teachers from both primary and secondary schools. We have mini-masterclasses for teachers as well as hands-on mini-workshops in which students and teachers collaborate at primary and secondary levels.
Q. Our school has only a very small budget for STEAM - are the workshops going to help us?
A. Yes, some of the workshops are purely paper based that develop thinking skills whilst others incorporate the use of free software available to schools. Our goal is for teachers and students to experience how simply they can begin authentic STEAM and entrepreneurial programs in their school.
Q. We don't have a STEM/STEAM program at our school, can we still attend? We are quite advanced in the implementation of STEAM in our school, is this suitable for us?
A. Absolutely! We have deliberately sought out activities that are applicable for the many stages that schools may be around enacting STEM/STEAM and Entrepreneurship. Whether you are just at the start or an expert we have a range of teachers and providers who will be presenting ideas and activities that will address your point of need. Our goal is have teachers connect and network with other teachers and take away lots of ideas to implement at your school.
Q. Do we have to submit/propose a workshop to run at the conference?
A. No. However, if you have something you think other students and teachers would like then we would love you to submit a proposal.
Q. We are looking for new and innovative ways to develop our students, will we be able to ask questions and find out what other schools are doing?
A. Yes – this was one of founding intentions for this conference. We want students and teachers to experience a variety of hands-on workshops so they can go back to their schools and infuse new ideas into their programs.
Q. Why are you recommending students to attend and how many can I bring?
A. We have found that the best exemplars of school based STEAM and Entrepreneurship programs in Australia are driven by both students and teachers. We want to spark student leadership in your schools. This is why we are suggesting to schools to bring anywhere up to 15 students to the conference. We have enough going on for over 250 people!
Q. What does my registration include?
A. Every student registration for the Conference includes attending keynotes and access to all activities /events / workshops and materials.
Attending PD Teachers will receive a Professional Development Certificate of Professional Learning, access to all activities /events, keynotes, any master class sessions, workshops, presentation materials and notes, access to presenters and professional conversations. Price morning tea (half and full day conference) and lunch (full day conference only)
Q. I have a question about the conference
A. For general enquiries, please contact Rachel@spark-educonferences.com.au or call us on +61 0411270277
Q. Is my registration transferable?
A. Yes, your registration can be transferred to a colleague or student we ask that you provide all transfer details to us by contacting Rachel@spark-educonferences.com.au
Q. What is the refund policy?
A. 75% refund is available from 11 to 30 days prior to the event, after this date or for non-attendance refunds are not available and payment must be made in full. However, we will be pleased for you to transfer your registration to another attendee (see above). Sponsored and supported schools may differ. Please contact office@spark-educonferences.com.au to process this transfer.
Cancellation of an event by us
In the event of insufficient applications, the programs will not proceed and registration monies will be fully refunded. In the event of the program being cancelled, registration monies only will be refunded as we will not accept liability for the payment of any other associated costs.
Payment of registration
By submitting this form you are confirming that you have been given financial approval by the school/organisation to attend. All registration payments must be made prior to commencement.*Early Bird rate must be paid by the invoice due date otherwise we reserve the right to re-invoice at the standard rate. **Presenter fee (teacher/sponsor/guest) - students must still pay even if presenting. Student attendees: You agree as your school representative teacher to take full responsibility of the students attending with you. We aim to ensure all presenters/facilitators have their WWCC and the event meets Occupational Health and Safety requirements.
Privacy Policy
We promise to keep your information private at all times. We will not sell, pass on or by any other method share your information with a third party. We will store your information for the purpose of communication regarding the event and for methods required by you to use tools associated with this event. You will be added to our newsletter list for future events and correspondence, you are welcome to unsubscribe at any time.
NOTE: We will send emails prior to the workshop requiring you to take actions. This may include completing a short questionnaire to understand your current ability and needs, reading materials, accessing tools, setting up technical requirements, dietary requirements, and a reminder. Whilst we aim to keep these to a minimum your responses greatly assist in making the day more relevant to you.
Seeking Sponsors!
The conference brings together students and teachers to create an inspiring future where a community happens. We want all schools to have access to events like this and your support can make that happen. Sponsors have the opportunity to deliver hands-on workshops, contribute to the conversations, help us keep our admission costs as low as possible and offer scholarships. We invite you to consider joining us as a sponsor. Please contact us at office@spark-educonferences.com.au
Accessibility: We are committed to making our events as inclusive as possible. If you have additional accessibility requests, please contact us at office@spark-educonferences.com.au
Media on Premises: As part of our ongoing commitment to empower students and teachers, we may photograph, video and audio record our events to share important discussions and experiences via our presentation content, so we can scale our reach to people who are unable to attend our events in person. By entering our event location during our event, you agree that Spark Education Conferences has the right to use your likeness, image, voice, etc. in photos, videos and in any educational, marketing, advertising or related endeavours relevant to the work. You will not be compensated in any way for the use of your likeness, image or voice, etc. Being on the premises during our event means that you release and hold harmless Spark Education Conferences from any claims or actions that arise as a result of this production. You may opt out at any time by letting us know.
Thank you so much for your support and cooperation. We look forward to partnering you to create an inspiring conference.