**Wednesday Workshops**

1. **Needle Felting and Weaving**

**\*\* This workshop has an additional course fee of $50 which needs to be paid in advance of the conference to confirm your place.**

**Maximum of 25 participants**

**Presenter:** Jacki Smith – Lindfield Learning Village

**Target Audience:** Stage 4 Technology Mandatory and Stage 5 Textiles Technology

**Detailed Description:**

The purpose of this course is to provide all teachers of technology mandatory and textiles technology with the necessary ‘hands on’ skills to deliver the practical content relating directly to the teaching their subject.

Participants are exposed to, and experiment with, innovative approaches to teaching to accommodate and reflect the youth of today’s learning styles and preferences.

Participants will work as individuals and as a team to learn these ‘Hands On’ skills and knowledge to imbed into and update their current teaching programs, whilst working with an expert in this area. Participants will learn through doing as they develop work samples they can use in their classes.

While providing a ‘Hands On’ learning opportunity for participants, they will be guided through a series of activities that enable them to become proficient in the delivery and assessment of the Technology Mandatory, Textiles Technology and Textiles and Design courses they are teaching in their school.

Participants will work on 2 focus tasks - both in the Textile Art focus area - Needle Felting and Weaving. Both of these activities can be conducted without a textile room, opening it up for non-TAS teachers to undertake the program.

In Needle Felting, participants will be introduced to the skills and techniques behind felting and compare and contrast the fibres used - also looking at wet felting and the differences between.

Weaving will be focused on skill building and the different Cultures that are entwined. It will be discussed how to create your own looms on Adobe Illustrator and Laser Cutting your own looms for use in schools - reducing costs for the department.

**What to bring:** Participants will be supplied with all the equipment needed for the course. They should bring a notebook and their computer to access the lesson plans/units of work via Google Drive and to access videos. There is no prior knowledge needed for this course.

1. **Developing new projects in Industrial Technology -Timber**

N.B. this workshop was presented last year and is being repeated by popular request.

**Presenters -** Tony Wright (Lindisfarne Anglican School, Terranora) and Martin Naughton (St Joseph’s College, Banora Point)

**Target Audience** – New and existing teachers of Timber based subjects in Stage 4, 5 and 6. (including Technology mandatory and Industrial Technology Timber)

This workshop is intended for new and existing teachers looking to develop new projects or update existing projects, so the projects we teach are more appropriate to students of today and how to allow student input and student ownership into the design of timber projects.

As an example, think about how often would you see the following in a house – a magazine rack, coffee cup tree, spice rack, letter opener? Why do we continue to teach these projects?

The morning session

The workshop will cover “skills mapping” – what skills (hand and power tool skills, joints and joining methods) do we want our students to master or attempt to master as they progress through the Industrial Technology Timber course.

The workshop will cover “outcome mapping” - from the Stage 5 and Stage 6 syllabus – how to align the outcomes from the syllabus with the projects being proposed and developed or currently being taught. How to reverse map the syllabus outcomes to your current projects.

After morning tea / lunch

The workshop will cover new project development – taking an idea or even a picture from the internet.

Then developing hand drawn sketches, CAD working drawings, costings, looking at skills to be taught, construction sequence, outcomes to be covered, program development, folio development, theory to be covered, skill competencies covered.

Participants will be provided with a work booklet and will need to bring a laptop a USB-C, for copies of the digital files, and the CAD software you use at your school.

1. **UNSW Engineering Studies - Materials Focused day.**

Spend the day off site, at UNSW in the Materials Testing Labs.

**Facilitator –** Andrew Fairbank

This course covers Engineering Studies content to a depth that allows teachers to deliver content to a band 6 standard. The content focuses on areas of weakness identified from teacher surveys and HSC marker feedback.

1. **Onshape**

**Presenter** – Murray Arniston – Killara High School

**Target audience:** Teachers interested in FREE cloud-native CAD platform

This is a course introducing educators to Onshape. Onshape is a professional-grade, cloud-native CAD platform that students and educators can access for FREE on any device, anywhere, anytime.” It is cloud-based platform that works on both Mac and PC. Design complex solid and surface models using top-down or bottom-up methodologies. Create highly structured and detailed assemblies with built-in standard hardware and parts linked from other Documents. Create fully detailed drawings of parts and assemblies with dimensions, and import and export of DWG, DWT and DXF file formats. Participants will leave the course able to model and draw products suitable for high school technology and engineering subjects. They will be able to manage Onshape in a school environment and access and develop resources for use in the classroom.

1. **Title – How Artificial Intelligence is making Adobe more accessible to all.**

These workshop sessions will be held offsite at the Adobe Office in Darling Harbour

**Presenters -** Dr Tim Kitchen from Adobe and Adobe Education Leader Jason Eddie from Korowal.

Adobe’s artificial intelligence engine is called Adobe Sensei and it is becoming more and more pervasive in a wide range of Adobe Creative Cloud applications to make them easier to manage and quicker to produce amazing results. Adobe Sensei is featured in tools like Photoshop, Premiere Pro, Animate & Character Animator at the professional end and the new Adobe Express set of browser-based creativity and productivity tools. In March 2023, Adobe launched the public beta of Firefly which is the beginning of a whole new world of AI generative creativity.

Workshop options include:

* Adobe Express for simple graphics and publications
* Adobe Animate for 2D animation
* Character Animator for real-time animation
1. **Crafting Historical EVA Helmets: A Cross-Curricular Workshop for Stage 3 and 4 Students**

**\*\* This workshop has an additional course fee of $50 which needs to be paid in advance of the conference to confirm your place**

**Max 20 participants.**

**Presenter -**Matthew Stanley – Morisset High School

**Target audience** – Stage 3 and 4 STEM, HPGT, Stage 5 D&T

This workshop aims to integrate hands-on crafting with cross-curricular learning, specifically targeting Stage 3 and 4 students. By combining elements of history, art, design, and technology, participants will engage in a dynamic learning experience while honing their creative and technical skills.

Incorporating the use of EVA foam in Materials Technology expands the scope of traditional crafting materials typically explored in the subject. By introducing students to alternative materials like EVA foam, we encourage them to broaden their understanding of material properties, fabrication techniques, and applications beyond conventional wood and metals. Through hands-on experimentation with EVA foam, students explore its unique characteristics, such as flexibility, lightweight nature, and ease of manipulation, allowing for innovative design possibilities not achievable with traditional materials alone. Moreover, working with EVA foam provides students with valuable insights into modern manufacturing processes, including thermoplastic forming and composite materials, aligning with contemporary trends in materials engineering and technology. By integrating EVA foam crafting into Materials Technology, we foster creativity, critical thinking, and problem-solving skills while preparing students to adapt to evolving industry demands and technological advancements in materials science.

Workshop Overview: In this 6-hour "Hands-On" workshop, will use EVA foam to craft helmets from various ancient civilizations, including Vikings, Medieval Europe, Romans, and more. Through the medium of EVA foam crafting, students will have the opportunity to delve into the cultural significance and design aesthetics of historical helmets while developing their practical crafting abilities.

Workshop Objectives:

Foster an understanding of design principles and construction techniques through hands-on helmet crafting using EVA foam.

Promote cross-curricular connections by integrating history, art, design, and technology concepts into the crafting process.

Encourage creativity, critical thinking, and problem-solving skills as students design and build their own historical EVA foam helmets, using materials outside the traditional wood and metals.

Provide a platform for collaborative learning and peer feedback, enhancing communication and teamwork skills.

Workshop Outline:

Hands-On Activities:

Research and Inspiration: Students select a historical helmet design to recreate, conducting research and gathering reference materials.

Pattern Drafting: Guided instruction on creating helmet patterns tailored to individual designs.

Cutting and Shaping: Techniques for cutting, shaping, and heat-forming EVA foam to construct helmet components.

Assembly and Detailing: Step-by-step guidance on assembling foam pieces and adding embellishments to enhance authenticity.

Painting and Finishing: Instruction on painting techniques, weathering effects, and surface finishing to achieve a realistic appearance.

Introduction to Historical Helmets: Overview of helmet designs and functionalities from various ancient civilizations.

Historical Context: Exploration of the cultural and historical significance of helmets in warfare, protection, and symbolism.

Design Principles: Understanding the key design elements and aesthetic characteristics of Viking, Medieval, Roman, and other historical helmets.

Reflection and Presentation: Students share their completed helmets, discussing their design choices, historical inspirations, and the crafting process.

Peer Feedback and Discussion: Encourage students to provide constructive feedback to their peers, fostering a supportive learning environment.

**Presenter Qualifications:** As a passionate educator and experienced cosplayer with a background in history and design, I am dedicated to creating engaging and enriching learning experiences for students. I have facilitated numerous subjects and projects and educational programs that integrate art, history, and technology, receiving positive feedback for my interactive teaching approach and ability to inspire creativity.

**Conclusion:** I am excited about the opportunity to lead this cross-curricular workshop, empowering Stage 3 and 4 students to explore history through hands-on crafting and design. By combining historical inquiry with practical skills development, this workshop will not only deepen students' understanding of ancient civilizations but also foster creativity, collaboration, and critical thinking. Thank you for considering my proposal, and I look forward to contributing to the success of your conference.

1. **Mechatronics 7–10 Computing Technology**

**Presenters** - Martin Levins & Shane Byrne at University of New England and Australian Catholic University respectively.

**Target Audience** - the mechatronics component of 7–10 Computing Technology as either a stand alone or introductory course for stage 6 work.

Both Martin and Shane are experienced K-12 teachers and are currently lecturers in Digital Technologies in education. They have worked together in the 4 year ‘Digital Technologies in Focus’ project with ACARA where they worked with 160 disadvantaged schools throughout Australia, helping teachers deploy the Australian Curriculum: Digital Technologies Curriculum.

Our introduction will cover the requirements of the syllabus and will lead into work with microcontrollers with both sensors and actuators, and the transition from block based computing to General Purpose Programming Languages that will affect many in Stage 4. This transition will be revisited throughout the course, reflecting the diversity of students who may come to Stage 4 with no coding experience or are fairly proficient.
We will move from there to the incorporation of microcontrollers with Maqueen robots, using ultrasonic sensors to aid navigation, then using servos to load and shift materials.
Following this, we will experiment with artificial intelligence built into cameras and code the robots to carry out various missions
We will then pick up a different form of robot with several degrees of freedom to simulate pickers or parts assembly.
Some time will then be given to reflect on what has been achieved and possibly revisiting earlier activities, followed by a revisit of syllabus requirements to look at where these activities might best fit, and a how they could inform unit development in stage 6.
A personal laptop will be required, with application install privileges as we will experiment with a few different coding platforms.

1. **The Arbot Series 7 – A Solderless DIY STEM Robot Designed for Teachers**

**\*\* This workshop has an additional course fee of $40 which needs to be paid in advance of the conference to confirm your place**

**Max 12 participants.**

**Presenters** – Rob Newell – Camden Haven High School and Hayne Newell – Hayne Robotics

**Target Audience** – Stage 4 Technology, STEM, HPGT, Stage 5 Computing Technology, Stage 6 Software Engineering

Build and take home your own affordable STEM Arduino based robot.

Involves:

- constructing an MDF Arduino based robot (gluing and wiring)

- programming the 7 challenges (C++ Arduino IDE programming)

1. **Implementing Virtual Reality in Technology and STEM Curriculum - Become an authentic creator of VR**

**Presenters:** Rosanna Cotino & Bill Edwards - edgedVR

**Company** edgedVR - is a dynamic virtual reality company that offers cutting-edge technology to enhance learning experiences using self-authoring tools and VR platforms for creating and experiencing immersive & purposeful VR.

**Target audience:** Stage 3-6 STEM, Stage 4 Mandatory Tech, Stage 5 & 6 D & T, Multimedia, Computing Stage 5, Software enterprise Stage 6

1. **Introduction to VR technology for education:** Types of VR, software, hardware, content components, how it’s used in education, challenges and implementation process.

**TIP:** Do an audit with your IT department : Do you have VR headsets at the school already?

1. **Tutorial on Headset management: -** View contentTypes of headsets, 3 vs 6 DOF, management, connecting to wifi, using offline versions, application for ready-made viewing content. Access to VRCreate
2. **Tutorial on Project Management**. Framework to create a VR Project, Storyboard planning, folder and file storage, using VRCreate Teacher resources
3. **Tutorial on Creating Content:** Search andCreate 360, filming with 360 camera, Generate using AI, File management, interactive content creation, using canva, photoshop and other creation and editing tools
4. **Tutorial on Software:** Learn to use VRCreate authoring tool, use ready made example to navigate and then edit. Learn the editor features, Create a project from scratch and transfer to the headset.
5. **Planning for classroom implementation:** Entry point, mapping to curriculum, lesson planning, Group work

**Participants will gain knowledge:**

* How VR is mapped to curriculum technology courses
* How VR can be used to implement STEM and Inquiry based Learning
* How to afford students agency for creating and build VR simulations and environments
* Knowledge and skills on how to create and deliver content as a class lesson in VR

**What to bring:** Windows laptop if possible!

**Advisable purchase per teacher:** Annual Licence at a reduced price $250 usually $300

**School introduction package:**

* 1. Licences, 4 Headsets & a 360 camera with stand for $9,999 + GST
1. **The Tools, Timber and Techniques required for playing with Epoxy Resins Tips and Tricks Workshop**

**\*\* This workshop has an additional course fee of $260 which needs to be paid in advance of the conference to confirm your place**

**Max 12 participants.**

**Presenter -** Dave Giddings - BoatCraft NSW

This workshop is a practical hands-on session presented by the Epoxy Guru, Dave Giddings. During this workshop Dave will show you how to do a Casting resin River pour and then you will complete your own pours onto the timber you supply. You do not need any previous woodworking or craft skills. Allow Dave to take you from novice to competent in achieving high gloss finishes in six hours. This will get you started on projects as Classroom Training Aids.

Learn about resin safety:Dave will take you through the safest practices for using the correct craft epoxy resin for different applications. He will show you how to set up your workspace to eliminate epoxy resin ending up everywhere. Then, if you have a disaster, provide the best ways to remove resin from your skin and clothing. By doing this workshop, you will be confident to advise students on the correct epoxies for the classroom and complete your own projects in the future.

Learn the skills and techniques: You will be loaded up with good Tips & Tricks to do Casting, Art and Coating Resin Pours using Australian made Luci Clear modern technology Epoxy resins. You will gain techniques on how to take very ordinary pieces of recycled and new timber and turn them into one off masterpieces. The course cost covers all product needed. All you need is the offcuts of timber and mould materials (we can supply if needed) so you can take your creations home and display with pride.

This workshop will teach you how to make bubble free River pours, coloured scenes on cutting and charcuterie boards. Then you will learn how to create very high gloss wall features such as seascapes and pieces of high gloss artwork. You will carry out your own art resin pour onto a piece of timber and then learn how to use a hair dryer to spread and merge coloured layers of resin to achieve your design. Followed by preparing and executing your own high gloss, crystal clear, bubble free, pour on finish coating using Luci Clear coating resin.

1. **Making Mitred Boxes – to be held off site at the Timberbits workshop (12 Gerald St Marrickville)**

**\*\* This workshop has an additional course fee of $200 which needs to be paid in advance of the conference to confirm your place**

**Presenter – Darren Stewart from Timberbits**

**Max 12 participants**

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In this immersive course, we will guide you through every step, empowering you to confidently teach your children while achieving impeccable results, including flawless mitred corners, precise grooves,

and rebates—all accomplished with hand tools alone. From timber preparation to marking the blanks, cutting box sides to size, and meticulously crafting mitres, trenches, and rebates, we'll cover it all. You'll learn to size your base, master dry fitting, apply veneer splines, and expertly finish off with

top and handle construction alongside thorough sanding techniques.

By the course's conclusion, you'll possess a comprehensive understanding of essential tools and jigs, enabling you to craft a fundamental box effortlessly and pave the way for tackling more complex projects with confidence.

Join us at Timberbits Wood School, Wood Academy, located at 12 Gerald St,

Marrickville, NSW 2204.College Banora Point