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| Workshop Title | Description |
| **A hands-on introduction to a programmable drone.**  Mukesh Soni and Pathik Shah  **Pakronics**  Stage 4 – 5 STEM teachers.  Max 12 | Drones are increasingly used in multiple ways in many industries – particularly within the agricultural and primary industries. From identifying and targeting weeds in crops to finding livestock, to finding people in national parks, to use in photography, and so on. With the advancements in technology, programmable drones make their way in to education.  Pre-requisite : Basics of programming (graphical or script-based)  BYOD : Laptop or computer is required for drone programming |
| **Advance projects with Micro:bit radio communications**  Mukesh Soni and Pathik Shah  **Pakronics**  Stage 3 – 5 STEM teachers.  Max 12 | The Micro:bit is most popular with teachers who are starting a technology class as it works straight out of the box. Have you explored, however, the advanced features it offers to create complex projects? Features like radio communication between Micro:bits allow us to dig deeper into sensor network and data logging.  Through hands-on exercises, participants will program the Micro:bit to create projects based on the concepts of radio communication and data logging.  To attend this workshop, a basic working knowledge of Micro:bit will be useful. However, the workshop will briefly touch upon graphical programming before indulging into inter-Micro:bit communication using radio and using them for creating exciting data logging applications.  Pre-requisite : Overview of Micro:bit and basics of graphical programming (***optional***)  BYOD : Laptop or computer is required for Micro:bit programming |
| **Laser Curriculum Ideas for The Classroom**  Phil Matthews and Ray El Dourgam  **ALFEX laser**  Target audience:  ·        Woodshop/Woodworking  ·        Industrial arts  ·        Fashion courses & labs  ·        Technology classes  ·        Art/design/photography courses  ·        STEM-focused courses | **We will explain the hidden benefits of having a laser cutter in your school.**    **Participants will learn:**  How to compare laser systems and make the best decision for your school  What safety precautions your school needs to take when installing a laser machine  3 Laser Curriculum ideas for the classroom you can implement right now including:  how to easily set up designs using graphics software  project ideas suitable for a classroom  compatible materials    **Participants don’t need to bring anything, it is suitable for beginners.**  **Maximum 20 people** |
| **Discover what a powerful tool a laser can be in engaging, inspiring, and educating** **students.**  Phil Matthews and Ray El Dourgam  **ALFEX laser**  Target audience:  ·        Woodshop/Woodworking  ·        Industrial arts  ·        Fashion courses & labs  ·        Technology classes  ·        Art/design/photography courses  ·        STEM-focused courses | Lasers in the classroom can build critical thinking and problem-solving skills, foster creativity, encourage peer collaboration, and create more engaged students.  Participants will learn:   * What Classrooms Can Benefit from a Laser? Courses that can incorporate a laser machine * Hidden benefits of a laser system – using the laser outside of the classroom * How to compare laser systems and make the best decision for your school * Types of tubes * Laser safety ratings * Ease of use * Networking capabilities * Everything your schools need to get up and running with a laser machine * Total costs to consider * Safety requirements for schools * Materials * Tech Support * Maintenance requirements * 3 Laser Curriculum ideas for the classroom you can implement right now * Practical demonstration will cover: * how to easily set up designs using graphics software * how easy and safe it is to use our laser machines * what materials are compatible to use with our laser machines |
| **Clear Coatings using Modern Technology Oils, AQUACOTE & POUR-On-Gloss & the Clear System**  Have you always wanted to know the Tips & Tricks of how to achieve great finishes using recycled timber? What products and requirements for internal and external conditions?  Dave Giddings of DRIVE Marine Services.  Min No. of Participants – 4 Max No. of Participants – 10 | **Bote Cote & EPOX-E-Glue – A Safer Way to Work**  During this workshop Teachers will be shown different techniques for finishing timber projects for interior and exterior use using Aussie developed products which are safer to use. The workshop will include;   * Pour On Gloss for providing a water Clear high gloss finish that is self - levelling. Participants will be shown; * How to set up work pieces correctly to ensure an even coat over the surface. * Preparation, mixing & pouring technique. * End up with the perfect finish - free of air bubbles. * Participants will carry out their own pour on a piece of plywood. * Interior coatings using the water based Aquacote Two Pack Water Based Polyurethane for clear finishing and colours which is much safer to use than solvent based varnishes and Paints. * Participants will be shown its unique characteristics by coating a piece of timber. * Examples of different timbers coated showing the extremely tough finish. * Wash the brush & container out in water - water is its thinners. * You will be shown how there is no waste. * Come, try and see why. * The long lasting Clear System for Exterior coatings based on sealing the timber with Bote Cote Marine Grade Epoxy resin with Non Yellowing Hardener and then applying an extremely tough UV stabilised coating over it. * Why Bote Cote Epoxy Resins are safer to use. * How this system densifies soft timber. * Why woodworkers need to seal the timber all over with a High Solids Epoxy resin for exterior use and bench tops. * Then overcoat with Clear Aquacote to provide a long lasting finish.   **Note:** You will be given the opportunity to play with these products and understand their idiosyncrasies and techniques for a perfect finish. Plus why they are modern technology and the advantages in using them. We will also cover some HSC projects students have completed in the past using these products. |
| **Gluing using Modern Technology Adhesives**  Have you always wanted to know the Tips & Tricks of how to achieve high strength waterproof joints.  What about those pesky joints that creep?– eliminate them. What about those hard to glue timbers where the joints pull away?  Dave Giddings of DRIVE Marine Services.  Min No. of Participants – 4 Max No. of Participants – 10 | This workshop is to introduce teachers toGluing all sorts of materials using modern technology adhesives without screwing & gluing. The workshop will cover the use of EPOX-E-Glue, Bote Cote Epoxy with Fillers and Purbond Polyurethane Glues based on a “Safer Way to Work”. The workshop will include;   * Why these modern technology adhesives should be used in the classroom over other Epoxies, polyurethanes and PVA glues. * Where and when to use the Purbond and / or EPOX-E-Glue / Bote Cote for projects. The use of these adhesives is mainly aimed at Year 11 & 12 Students projects where creative designs and workmanship is required. * Purbond for use in Vacuum Bagging and fast gluing to keep jobs flowing with Purbond FX & F20 such as Cutting boards. * We will also show and let teachers use the glues, how to mix fillers with the Bote Cote to use as an adhesive and for filleting joints. * A bit on Boat Building Techniques for creative woodwork projects. * Other applications where these glues are superior to PVA’s such as Cutting Boards or other applications where the joint may be subjected to water. Neither glue suffers “Creep”. * There will also be a discussion on basic joint failure and adhesion testing. |
| **Hands-On Metalcraft from Chevington Tools**  Presenter - Greg Cowie  Target Audience: -  Any age from year 7 to Senior or adult for Metals, D&T, Technology Mandatory or special needs/at risk students. | Hands on instruction on the use of the Metalcraft tools from England. These tools are safe & easy to use in any school across most ages for those with or without previous Metalworking experience.  Teachers attending don’t need to bring anything with them as all materials are provided. The aim is to not only learn how to use these tools but also make a project to take away which could be used as a teaching model later. |
| **Taking your laser to the next level**  Presenter - Rob Thompson - Business Development Manager with **LST Group**  Target audience- Educators and ancillary staff who are actively using laser cutters in the classroom.  Min - 6 Max - 20 | With the increasing popularity of laser cutters in schools, teachers are regularly asking for advice on optimising or maximising their usage. Are jobs taking too long, are there too many jobs or maybe your laser is underutilised? Rob will provide practical, best practice processes that will reduce bottlenecks and encourage more efficient use of the laser in the your classroom. As previously stated, this course will mostly benefit educators and ancillary staff who are actively using laser cutters in the classroom. No devices or software are required, though attendees may wish to take notes. Application tip sheets will be provided.  Topics covered will include-   * Own your laser (Take best advantage of your laser by understanding how it works) * Redeeming the time (Design and set out conventions to improve throughput) * Cut it better (Proven methods for achieving improved results on commonly lasered materials) * Can I laser it? (How to approach new or untried materials) |
| **Lasers for Education / Laser in the classroom**    presented by Sarah Lupold  **Trotec Laser**  Target audience**:**  Technology Mandatory teachers, STEM teachers, Arts and Design, Woodworking  10-15 participants | In the last few years, there has been a huge increase in the use of laser technology in educational establishments, revolutionising the classroom and expanding teaching capabilities. Students can gain practical experience in emerging technologies that not only benefit them in the future workspace but can enhance their educational experiences today. A laser machine can give students the opportunity to discover and test new processing solutions, create individual prototypes, learn how to use CAD/CAM programs and create physical models. The skills that can be gained while using innovative technologies like laser machines can then be taken out of the classroom and into future careers.  To show how to implement this in a classroom, we propose to run a workshop where teachers can learn how to incorporate a laser in the curriculum. They will design a file which they can then process with a Trotec Laser machine – we will simulate a real classroom situation and explain the best and quickest use of a laser machine in education.  What participants will gain/achieve: use of CorelDraw and/or Illustrator, use of laser software by Trotec (Job Control) and the use of a laser machine in the classroom.  Participants need to bring a laptop with Illustrator or CorelDraw.  Prior knowledge: beginner to advanced |
| **Universal Router Guide**  Steve Somerfield  Target Audience all teachers using a router or wishing for a simpler way to use routers | The **Universal Router Guide** has been designed by a teacher and the motivation behind this invention is to minimise teacher and student use of an inverted router table and give students an alternative and innovative way of constructing woodwork projects.  The guides are live on **OnGuard** and there are two models available. One has two self-centring vices and the other has three self-centring vices.​ The smaller version is an entry model and has been produced at a significantly cheaper price.  **At this years conference** the workshop for the Universal Router Guide will involve a brief run down on how Patents, Trade Marks and Design Registrations work in regards to inventing a product.  A booklet with new project ideas for stage 4, 5 and 6 woodwork will be given to teachers.  A demonstration on how both guides work, approximately 40 models and projects which incorporate the use of the guides will also be shown.  The guides are simple to use, which results in minimal waste as students rarely make mistakes when using  the guides.  The 20 minute video on the website [http://www.universalrouterguide.com.au](http://www.universalrouterguide.com.au/) is a great teaching resource for stage 6 students as it is a good example for **emerging technologies.**  I have been using the guide with the past two HSC groups and student/teacher timelines have been significantly reduced as the guide allows projects to be constructed quicker.  Edmund Rice and Aquinas have purchased a second guide,  Hope to see you at this years show, |
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