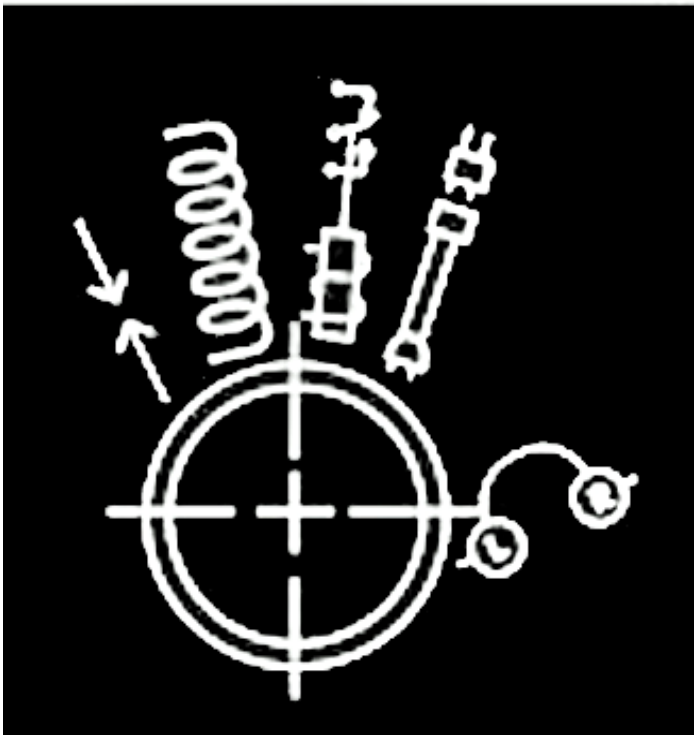
T.E.A.V.
CONFERENCE 2007



"Linking Learning, Thinking & Doing"

PROGRAM AND
REGISTRATION INFORMATION

Friday 11th & Saturday 12th May 2007
Northland Secondary College

CONFERENCE INFORMATION

Venue:
The venue for this year's Conference is Northland Secondary College. The school has modern facilities allowing for both practical and seminar based workshops and is located at:

62 Murray Rd
EAST PRESTON VIC 3072
Ph: (03) 9478 1333
Melways Ref: P19 B12

Public Transport:
Train Services
From Preston Station it is just a short walk east to Northland SC.

Bus Services
Several bus lines are available that travel up Murray Rd past Northland SC or up Albert St.

- 527 - Gowrie Station - Northland Shopping Centre (via Murray Road)
- 555 - Epping Plaza - Northland (via High Street)
- 556 - Epping Plaza - Northland (via Dalton Road)
- 567 - Northcote - Regent (via Plenty Road)

Please see
www.metlinkmelbourne.com.au
for details.

Parking
Free all day parking is available on the school site and is **accessed only from Sheila Street. Please note that all Murray Rd entrances to the school will be closed on both Friday & Saturday.**

Taxi Services
13 CABS - 13 22 27
Embassy Taxis - 13 17 55
Arrow - 13 22 11
Silver Top Taxis -13 10 08

Accommodation

Rydges on Bell – Preston
205 Bell St
PRESTON VIC 3072
Ph: 1300 857 922

William Motel
205 Bell St
PRESTON VIC 3072
Ph: 1300 668 400

St. Georges Motor Inn
334 St. Georges Rd
THORNBURY VIC 3071
Ph: 9416 8233

Resource Exhibition – Delegates will have time during the Conference to visit resource displays and find out about new and useful resources that are emerging from industry. The resource display includes a wide range of companies and organizations that provide equipment, materials, computer software and curriculum resources to Australian schools and educational institutions. A number of exhibitors have provided prizes for teachers who visit the resource display area so please make use of this! This prize draw will be drawn Saturday afternoon in the hall.

Welcome

Advances in Design and Engineering Technology consistently present new challenges for us all. Technologically speaking, the education sector has witnessed major changes in the past and these, will continue to increase and impact on the future.

The 2007 TEAV Conference on "Linking Learning, Thinking and Doing" aims to stimulate, activate and refresh thought, creativity, logic and imagination in teachers by, showcasing examples of materials, processes, equipment and support systems for implementing, maintaining and sustaining Technology education.

Over the course of the conference, many presentations will bring a wide range of teachers together and special mention goes to all the presenters for the time and effort put into their presentations.

The quality of the annual conference is also enhanced by the contribution of sponsors and exhibitors and the Association acknowledges their generous support.

Welcome one and all to the 2007 TEAV Conference, an event embracing opportunity, invention, innovation and possibility, an event linking learning, thinking and doing.

Adriana Tarascio-Agosta
TEAV Education Officer

Contents

2007 Keynote Presenters

- **Richard Henderson**

Richard Henderson is a leading Australian design professional with an international reputation. He has over 25 years experience in the development of a diverse range of brand image projects – Retail, Corporate, Environmental and Government. His experience includes the Creative Direction of identities for Telstra, AFL, BHPBilliton, Crown, ANZ Bank, FoodWorks, Bunnings, Orica, Johnson & Johnson, and MCG.
Richard was the design director for the Sydney 2000 Olympic Games identity program and the Visual Identity Consultant for the Melbourne 2006 Commonwealth Games.

In 2003, Richard established R-Co, a brand identity, image and internet solutions consultancy. The focus of R-Co is on helping clients establish a competitive advantage through innovation, creativity and imagination. Recent projects include the new identity for the financial group Finsia, the rebranding of the newly merged superannuation funds ARF and STA – AustralianSuper, the identity for the Melbourne Cricket Ground, Tennis Australia and Golf Australia.

- **Graeme Wiggins**

Graeme is a teacher, artist and designer. A graduate of Monash University and the University of Melbourne, he has also studied the art and culture of the Middle East, China and South Asia over a number of years in the role of Adventure Tour Leader. His commercial sculptures can be seen in Fitzroy and Prahran. Graeme's Brunswick Street work Volare Angel has become an instantly recognisable Melbourne icon.

His design practice spans the fields of industrial, furniture, graphic and web design. He currently teaches Art, Design and Technology, Animation and Visual Communication and Design at Trinity Grammar School in Kew. His teaching practice centres on Active Learning projects and outcomes. He has had considerable success with his involvement as a team manager in the RACV Energy Breakthrough, with the Trinity team winning the Hybrid Open Class with their Pedal Electric Car.

Friday Session 1 10.45am – 11.45am

F1 in Schools
Peter Clinton, Trinity Grammar School
Code: F1A
After being crowned the World Champions, learn what *The Stingers* team has experienced and achieved over the last 12 months including winning an Australian Engineering Excellence Award at Parliament House Canberra. What opportunities are available for your students? F1 in Schools program offers access to world class CAD/CAM software CATIA, CNC machining, Virtual Computational Fluid Dynamic software, smoke visualisation and wind tunnel apparatus.

PICAXE Technology – Maximizing the Experience
Rob Ward, Lakes Entrance Secondary College
Code: F1D
The Picaxe microcontroller provides a powerful mechanism in the learning environment. Two new designs highlighting an 08M system (8 Pin) and an 18X system (18 Pin) will be presented. These boards have been designed to maximise potential classroom engagement from circuit construction through to system design. Students can build the main microcontroller circuit and add simple circuitry around them to ultimately create complex, powerful systems. Examples of applications for middle school to senior years will be presented and explained, along with a Teacher's Guide and Student Work Book.

'OnGuard' ACEPro Safety Testing and Tracking
Bruce Lewis & Deborah Jones, "On Guard" Safety Training
Code: F1B
Instructing and training students to work safely in school workshops has become a time consuming part of technology curriculum delivery. OnGuard ACEPro is the award winning workplace safety training program that instructs, tests and tracks student workshop safety training. It was awarded the 'Best Safety Training Program in 2006 by the NSCA. This session will demonstrate the many functions of this amazing program.

Learn About Technology While Playing
Annette Kennewell, Educational Experience
Code: F1E
Educational Experience is launching a new range of technology resources suitable for both primary and secondary students. New resources include mechanics, statics, pneumatics, electrical technology, regenerative energies, robotics, digital cameras, and control technology. Workstations will be set up for you to come along and learn about technology while playing with the new resources. This is a hands-on session demonstrating how to encourage student thinking and learning by putting technology into action. All teachers attending will receive a free sample to construct during the session.

'Wood as a resource' – Sustainable Timber Harvesting
Karen Brown & Colin Boyd, Toolangi Forest Education Service
Code: F1C
This 60 minute workshop will showcase the Design and Technology field trips provided by the Toolangi Forest Education Service in the Toolangi State Forest, located within the Victorian Central Highlands, 75km from Melbourne. Timber harvesting is permitted in certain areas of the State forest. A PowerPoint presentation illustrating the timber harvesting process. Beginning at the logging coupe, the presenters will investigate timber processing through to the local sawmill where the log is cut into useable timber lengths, then sold to various hardware chains. They will look at some of the properties and uses of different Victorian tree species as timber resources, explore the advances in technology that have modernised timber harvesting techniques and investigate the sustainable use of Victorian forests. Teachers will also discuss the alternatives to timber, comparing the impacts of different materials on the environment. Included will be a short DVD on the construction of their unique Discovery Centre. If time permits a 12-minute film 'Forests of Ash' which explains some of the changes to the timber industry over the past 100 years will be shown.

A Tour of Ntec Facility at Northland Secondary College
Daniel Knott, Northland Secondary College
Code: F1F
Daniel will show participants the relationship between structural design and learning in Manufacturing and Technology. This session will be of particular interest to participants involved in designing new workshop structures or redesigning existing/old structures when building or extending schools.
The tour begins from the Ntec café area.

Friday Session 1 (Continuation) 10.45am – 11.45am

Instant Fabrics in the Microwave … and Lots More!
Anne Mitchell, Genesis Creations
Code: F1G
Simple to use … simple to teach … stunning results! These words accurately describe the processes you will learn and the results you will see in this workshop presentation. Keep up with the instant gratification generation by designing amazing fabrics in a household microwave oven. Anne will show you how to use Australian-made products - totally non-toxic and non-polluting - to design exciting, individual fabrics for use in all sewing and 'garment recycling' projects. Help your students to express their individuality with these creative ideas. Help our environment by using products that are safe, effective and economical - and Australian made.

Solar Boats
Wayne Young & Ian Gardener, Billanook College
Code: F1I
Teachers will learn about solar electricity and efficient energy use in a hands-on manner by constructing model solar vehicles. Teachers attending will be better able to assist their students to construct or improve model solar powered boats that can then be used at school and/or entered into the state competition at Scienceworks in Term 4. Construction involves the use of recycled materials and the boats are quite simple and cheap to construct. Teachers will learn about friction, propeller choice, aerodynamics, simple circuits, and solar electricity.
This year new categories will be added, eg. Radio-controlled boats.

Kites in the Classroom & Wood Tongue Drums
Dean Roberts, Camberwell High School
Code: F1H
This 60 minute workshop will be broken up into two half hour sessions.
Session 1
"For as long as history has been recorded man has looked skyward and desired to fly like the birds. One way they have tried to achieve this is through the use of kites. "
This is a practical guide aligned to the VELS on using kites in the class room. Information on student learning activities, worksheets, websites, and classroom materials and suppliers. With scope to create integrated lessons with other subjects such as Maths and Science. Aimed at years 7-10.
Session 2
"All cultures throughout history have played music and they have used a myriad of different instruments. They have also used them for many reasons other than pleasure. In this project you will find the answers to these and many more questions."
This is a practical guide to an integrated project between Technology materials and The Arts/Music. Students learn about musical instruments, design and manufacture a tongue drum then perform in groups, with their own hand made instruments, in their music class. Information on student learning activities, worksheets, websites and materials required will be given. Aimed at years 7-8.

Friday Session 2 — 11.50am – 12.50am

RACV Energy Breakthrough
Foster Adem, Peter Clinton & Graeme Wiggins, Trinity Grammar School
Code: F2A
In Trinity's 3rd year of participation in the RACV Energy Breakthrough Challenge, they finally *cracked it* for a win, (and second place as well), in the Open Class, Hybrid division. They entered two vehicles on the 2006 event. One a pedal/electric, the other, a pedal/petrol powered vehicle. After a major commitment to developing a new body shell, the wind tunnel testing at RMIT's Mechanical/Automotive engineering facility left them with no illusions as to the best body design. The basic current power source engineering of these two vehicles has stood the test of time. One vehicle is a veteran of two race events, the other, has seen out three.

Building and Programming Scoreboards
Phillip Pawlowski, APMP
Code: F2B
Participants will receive hands on training in programming the Picaxe microprocessor controller, and will also view a selection of robotics and electronics kits that students have assembled. APMP has been involved in two ASISTM grants throughout the year, with 6 secondary schools and 4 primary schools. Both grants focus on the UniBoard universal electronics board. This powerful board allows students to quickly build many types of gadgets, including a lie detector, light seeking robot, line tracking robot, stop light simulator, and many many more.
The APMP "Scoreboards for Schools" program will also be discussed. This program encourages students and schools to build their own working electronic scoreboard for a fraction of the cost of a commercial equivalent. This is a medium scale project, where students build a giant 2.4m by 2.4m board, containing over two thousand large Light Emitting Diodes (LEDs). Discussion on soldering and safety in the classroom will also be included.

Skill Based Wood Projects Years 7-10
Glen Johnson, Gladstone Park Secondary College
Code: F2C
This presentation focuses on skills and designs of a variety of wood projects. These include a spinning top, candle holder, upholstered footstool, CD holder, chess table and a music box using crocodile clips and PCB Wizard to design and make the circuit. These projects allow students to competently use all the machines and tools in the workshop, including the wood lathe, pedestal drill, scroll saw and router, as well as many hand tools such as planes, spoke shaves, tenon saws, chisels, files and rasps and jigs including a doweling jig and dovetail jig. All participants will be supplied with a CD containing worksheets, turbocad drawings and pictures of student work to help them get started. These projects have been tested and refined over many years. Students not only gain excellent skills, they emerge with high quality work that they have enjoyed making and of which they can be proud.

A Look at Two Distinct Programs at Northland SC
Tim Beare, Northland Secondary College
Code: F2D
Tim will look at two distinct programs on offer at Ntec.
The first is the Pre-Apprenticeship Program, unique to Northland SC, a Certificate II in Manufacturing Technology offered in Semester 1 with options offered in Semester 2 in each of the following: Engineering, Building & Construction and Electro Technology.
The second is Sustainable Technology Education which has a focus on grid interactive PV installation and student activities connecting a RAPS system.

Silk Paper & Soft Cut Printing
Tania Di Berardino, Zart Art
Code: F2E
Participants will learn the technique of making silk paper – silk paper is a quick, clean technique, which will provide a luxurious surface for fashion, design and sculptural work.
After completing a piece of silk paper, participants will also learn the technique of using Soft Cut carving block to produce a repeat design. For use on paper, silk paper, fabric or used as a rubbing plate.
Participant's will then use Dual-purpose fabric paints to place their designs on to silk paper as well as paper and fabric.
On completion participants will have made a sheet of silk paper, cut a repeat design using Zart Soft Cut carving block, printed using Dual purpose fabric paints on to silk paper, cotton fabric & paper, as well as using the Soft Cut block as a rubbing block.

Developing Technological Literacy
Dr. Mike Brown, University of Ballarat
Code: F2F
This session attempts to facilitate professional interaction and dialogue amongst researchers and practitioners in the area of technology education. The session begins with an interactive discussion that attempts to unpack the educational richness in the design, creativity and technology classroom. Consideration will be given to identifying the educational strengths and weaknesses that occur in these programs. It is suggested that one way of explaining what is happening in these learning spaces could be 'the development of technological literacy through the integration of thinking, creativity, multi-modal communication and goal-directed activity'. During the session an overview and summary of some of the contemporary international and interdisciplinary developments around the concept of 'technological literacy,' relevant to the field of education will be provided. Some of the ideas presented will be discussed and 'workshopped' with the intention of informing future educational practice within design, creativity and technology education.

Friday Session 2 (Continuation) 11.50am – 12.50am

Pandora's Box
Bruce Sharp, Kambrya College
Code: F2G
Bruce has been experimenting with the themes *Linking Learning, Thinking, Doing* at Kambrya College and this has grown into an interesting unit of work.
Bruce will show participants how these constructions engage the students in geometry as well as the usual marking, measuring and cutting. In this unit he introduces a little mythology with the story of Pandora's Box. The parts of the construction can be given relationships that engage artistic notions of art as a metaphor for life. The whole lot is tied together with a creative writing exercise about what comes out of the box.

Hovercraft
Wayne Young & Robert Forbes, Billanook College
Code F2I
The aim of this workshop is to enable teachers to assist a group of students to construct a hovercraft capable of carrying an adult. Construction involves the use of ply, foam, fiberglass, motor, fan etc. Students learn about friction, lift, buoyancy, aerodynamics, etc. A student built hovercraft will be on display.

Kites in the Classroom & Wood Tongue Drums
Dean Roberts, Camberwell High School
Code: F2H
PLEASE NOTE: THIS WORKSHOP IS A REPEAT OF F1H
This 60 minute workshop will be broken up into two half hour sessions.
Session 1
"For as long as history has been recorded man has looked skyward and desired to fly like the birds. One way they have tried to achieve this is through the use of kites. "
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Friday Session 3 2.00pm – 4.00pm

Mixture of Certificate II Engineering Studies Resources, what students needs to know, activity tasks and sample SAT's
Arnold Vandenhurk, Ouyen Secondary College
Code: F3A
Having been involved in the engineering area for approximately 40 years Arnold has a passion about the needs of students and the knowledge they require to enter this type of profession. This session will give other teachers a list of resources that can be used for VCE year 11 and 12 VET engineering studies. Some samples of activities that students have completed to obtain the required knowledge of a unit's work as well as Sample SATs from 2006 and 2007 so far will also be provided. Finally risk assessments and pre - operational procedures for tools and equipment/machines using On – Guard Safety units linking them to the tasks will be discussed. Contact details for obtaining these resources will also be provided.

Make A Walking Robot
Neville Young, Glen Waverley Secondary College
Code: F3B
Participants will construct a small two legged walking robot. This workshop will involve the assembly of a multi-ratio gearbox and the fabrication, construction and assembly of the robot man's head, body, arms, legs and feet from 3 ply and sheetmetal. The electrical system will consist of the wiring of the robot's motor, LED eyes, switch and battery. Construction work will include the use of the scroll saw, drill press, soldering iron and various hand tools. This project is suitable for students from upper primary (years 5 & 6) and lower secondary (years 7 to 9).

Writing and Assessing VCE Assessment Tasks
Lorraine Tran, VCAA
Code: F3C
This workshop will assist participants in writing assessment tasks for VCE studies, particularly for the new VCE Design and Technology Study Design. It will provide you with hints and tips for writing suitable tasks that reflect the requirements of the study design. Participants are encouraged to bring along assessment tasks to share with others, and will be given the opportunity to develop an assessment task (and its assessment) they can use in the future. Qualities of a well written task and sound assessment strategies will be discussed. There will also be a brief discussion on the sample examination questions for Design and Technology. Please bring your study design and assessment handbook to this session, as well as assessment tasks for the new study design (if you have them) to share.

Hydrogen and Fuel Cells Technology in the Classroom
Luigi Bonadio, Luigi Bonadio & Associates
Code : F3D
This workshop draws on the expertise of cluster participants and teacher experience compiled through the course of the **Australian Hydrogen and Fuel Cells Education Program.** H&FC education is a new concept in the broader scheme of Australian primary/secondary education offering many exciting curriculum opportunities across a broad range of subject material. The range and complexity of H&FC technologies currently under development present difficulty to teachers that are not adequately informed across the technology or resourced to handle the material with confidence in the classroom.
This workshop is designed to provide familiarity with H&FC teaching materials currently under development and generally improve on the practical skills of teachers. The objective of this session is to enhance teachers' scientific and technical literacy and practical knowledge in the effective delivery of hydrogen and fuel cells (H&FC) educational teaching programs. Teachers will review the current status of technological development, consider the relevant scientific principles and engineering design fundamentals, the integration of program objectives and VELS, and development of key program design elements. Teachers will also be shown how effective H&FC model equipment is as educational tools.

Making Plastic
Lee Raisbeck & Penny Chapman, CAM
Code: F3E
Learn how to create an exact copy of your small sculpture or jewellery creation in plastic! Using moulding and casting techniques with the latest, simple to use products, teachers will create a silicone rubber mould then cast with liquid plastic. In minutes you will have a perfect copy in hard plastic ready for painting. Re-use the mould to replicate the original as many times as you like then use your imagination to individualise each one.

Friday Session 3 (Continuation) 2.00pm – 4.00pm

Design Development – a look at engineering design and rapid prototyping
Philip Cranswick & Trevor Rose, Aitken College
Code: F3F
Design Development is an integral part of our Design & Technology and Systems Engineering Curriculum. This workshop focuses on the use of engineering software and rapid prototyping in the design room. Participants will get a real idea of how rapid prototyping works and why designers use this tool in industry. Briefly, to build a prototype or model, students save their 3D CAD part or assembly in .STL format. The data is emailed to a rapid prototyping service in Melbourne, where it is sliced into layers and downloaded into the SLA machine. The high power UV laser solidifies a liquid epoxy resin one cross-sectional layer at a time to build a physical model that is both accurate and virtually limitless in attainable complexity. Participants will also see examples of students' work and how an engineering design program, in this case SolidWorks, can be used successfully in the design room. Participants may be interested that SolidWorks is an integral component within most Product Design and Engineering degrees that are currently on offer at most of Melbourne's universities and is used widely in manufacturing industries.

Planning and Creating a Safe and Effective Technology Workspace at School
Athanas Takavada Zivave, Eaglehawk Secondary College
Code: F3G
Technology is often used as the generic term to encompass the know-how and creative processes that assist people to utilise tools, resources and systems to solve problems and to enhance living conditions.
Technology workspace refers to the facilities where teachers and students engage in designing, manipulating and processing materials for construction, fabrication, or development of projects or artefacts. The projects or artefacts are usually made from materials such as; timber and timber products, plastics, paints, adhesives, solvents, metals, ceramics, fuel gases and others. The technology workspace also includes a range of equipment; machines, tools, work benches, storage space, wet working areas, compressed air, and various types of power outlets. Planning and creating a safe and effective technology workspace that will promote all facets of technology education is of paramount importance to all technology teachers. Teaching programs should include strategies to help students develop safe work practices. Teachers must ensure they are aware of any potential dangers in the areas they intend to teach and plan ways to eliminate or control them. Failure to plan is planning to fail, and students will have only one conclusion, that technology is not safe. This presentation will examine some of the hazards and offer practical solutions for eliminating those hazards. A 'hands on' approach will be used. The presenter will share with the participants, statistics of recorded accidents in Victorian schools (technology area). Participants will be asked to discuss and share, in subject groups, hazards encountered and ways taken to stop reoccurrence. Subject groups will be given time to share their findings with all participants.

A Decade of Design and Collaboration in Textiles
Ilka White, Fabric Designer
Code: F3H
Ilka White's artistic experience spans exhibition, theatre and commercial commissions, including weave research and production projects for the fashion house Scanlon & Theodore. In the past 10 years she has collaborated with a jeweller, a digital embroiderer and a motorcycle leathers manufacturer as well as entire local communities in the making of her innovative work.
Ilka will share the methods she uses to develop design ideas and techniques. She will talk about her role as a designer for production work and discuss her fine arts practice.
After presenting a host of images and stories, Ilka will share physical examples of her work, answering questions about the research process, techniques, design briefs, processes, tools and materials she uses. Labeled 'one of Australia's most gifted and innovative fabric designers', Ilka White's limited edition multiples and concept driven exhibition pieces are stocked by galleries and boutiques alike. In 2000 she was awarded a Winston Churchill Memorial Fellowship to observe and learn from makers of traditional textiles in Indonesia, India, Nepal and Bhutan. Ilka's recent work has been strongly influenced by the natural environment and the forces at work therein. These abiding interests have informed aspects of her work presented locally in National and touring exhibitions at NGV Australia, Craft Victoria the National Wool Museum as well as internationally.

Using Dataloggers to Enhance Testing
Peter Niass, OZIntell
Code: F3I
An essential component of the design process is testing. Some of the parameters which are often tested include:
- Strength of bridges and other items
- Flexibility or deflection of structures
- Drag of cars, boats, wings etc.
- Compression, extension etc.
- Electronic parameters such as volts, current, power consumption, resistance etc.
- Absorbance, weight etc.
- Many others

At present, much of the technology used by D&T teachers and students to make these measurements is quite dated and often difficult and time consuming to use.
Using modern computer controlled dataloggers can streamline the measurements, allow for the collection of much richer data, and save time and money. More importantly, the instant graphical feedback provided to students helps to engage them more strongly in the investigative process.
This workshop will focus on two applications.
1. Testing bridges
2. Designing & Testing solar boats.

Teachers will have a hands-on opportunity to use state of the art dataloggers to carry out various investigations of these projects.

Woodworking using CADCAM
Fred Carlstrom, Camplex
Code: F3J
This workshop gives an introduction to how CADCAM software can be used in design and manufacture of decorative components in wood and other soft materials. We will address applications such as architecture, furniture, signs and decorative art.
During the workshop our presentations will demonstrate the software in action and how you can build exciting designs for the above applications using the many tools and functions in ArtCAM Pro. 3D designs are created from many different inputs that can be, a vector drawing, bitmap image or PDF. Alternatively the models can be imported from various internet libraries or use the extensive library that comes with the ArtCAM software. In the ArtCAM library you will find a wide range of models of animals, people, religions, cultures, textures and much more. ArtCAM Pro design tools are many and include the "Face Wizard", "User Defined Textures", "Celtic Weaves", "Perspective Distortion" and "Interactive Sculpting" to name just a few.
Once the design has been completed ArtCAM can output data so it can be manufactured to variety of machines. Typically this is milling machines, laser cutters or rapid prototyping systems. In this session we will demonstrate the Roland range of milling machines that are extensively used in education around the world.

Saturday Session 1 11.15am -1.15pm

Hydrogen and fuel cells technology in the classroom
Luigi Bonadio, Luigi Bonadio & Associates
Code : S1A

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Design Development – a look at engineering design and rapid prototyping
Philip Cranswick, Aitken College
Code: S1C

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Design Development is an integral part of our Design & Technology and Systems Engineering Curriculum. This workshop focuses on the use of engineering software and rapid prototyping in the design room. Participants will get a real idea of how rapid prototyping works and why designers use this tool in industry. Briefly, to build a prototype or model, students save their 3D CAD part or assembly in .STL format. The data is emailed to a rapid prototyping service in Melbourne, where it is sliced into layers and downloaded into the SLA machine. The high power UV laser solidifies a liquid epoxy resin one cross-sectional layer at a time to build a physical model that is both accurate and virtually limitless in attainable complexity. Participants will also see examples of students' work and how an engineering design program, in this case SolidWorks, can be used successfully in the design room. Participants may be interested that SolidWorks is an integral component within most Product Design and Engineering degrees that are currently on offer at most of Melbourne's universities and is used widely in manufacturing industries.

INTRODUCTION TO ProDESKTOP CAD Software
David Fletcher, Huntingtower
Code: S1B

ProDesktop is high quality 3D CAD software specifically produced for schools. PTC produces high-end CAD software for large corporations but has made this 'lite' version available with a 300-site license to teachers free of charge through its Design and Technology in Schools program. Students may also download the program for home or laptop use at no extra charge. This software is suited to years 7 to 12 and is highly recommended by Technology teachers in many states, particularly for furniture design, mechanical toys, and engineering or systems applications. It is very powerful, relatively easy to use and produces both orthogonal working drawings and fully rendered images, with a wide range of textures and simulated materials. It is being used widely in schools overseas and in Australia and there are extensive educational resources on the Internet. Search using 'prodesktop', or go to the Queensland INTAD site www.intad.asn.au. This Conference workshop will be run by David Fletcher, one of the State Trainers in ProDesktop. He teaches both Visual Communication and Design Technology to VCE classes. This is a "taster" session, to give participants an idea of the program's potential, and what is involved in the full training courses run by TEAV. To obtain a full license, teachers simply undertake a basic two-day training program and complete a small CAD project to demonstrate competency.

Eccentrics Linking Learning to Thinking by Doing
Norman Stephens, Norman Stephens Technological Toys
Code: S1D

The eccentric contains a tric, this workshop will involve participants learning how you can use this tric to link thinking and doing to create a whole range of toys and machines from the simple to the complex that use the eccentric as a starting point to create movement. This workshop will involve participants in discussing what the eccentric is and where it fits into the world of mechanisms, investigating how it creates a range of different movements. The movement created could linear, rotary or oscillating of combinations of the same. Then you will be involved creating a machine of your own design that has wheels driving an eccentric and extending this machine by designing your own moving parts controlled by the eccentric. All the mechanisms will be constructed using mostly timber products. At the end of the session we will share each others projects to demonstrate the power and versatility of the tric in the eccentric.

Saturday Session 1 (Continuation) 11.15am -1.15pm

Instant Fabrics in the Microwave … and Lots More!
Anne Mitchell, Genesis Creations
Code: S1E

PLEASE NOTE: THIS WORKSHOP IS A REPEAT OF F1G

Simple to use … simple to teach … stunning results! These words accurately describe the processes you will learn and the results you will see in this workshop presentation. Keep up with the "instant gratification generation' by designing amazing fabrics in a household microwave oven. Our presenter Anne will show you how to use Australian-made products - totally non-toxic and non-polluting - to design exciting, individual fabrics for use in all sewing and 'garment recycling' projects. Help your students to express their individuality with these creative ideas. Help our environment by using products that are safe, effective and economical - and Australian made.

Tales From the Tech Side
Chris Gilligan and Maureen Frith, Glendal Primary School and Great Ryrie Primary School
Code: S1F

See how to link literacy and technology in the primary classroom. From your favourite story books come many opportunities to explore materials, systems and technological devices, and to encourage students to solve problems creatively using a design brief. We demonstrate how to incorporate a range of thinking tools such as Tony Ryan's Thinker's Keys, Edward de Bono's Thinking Hat Sequences, Extended Brainstorming, Questioning Techniques and Question Mapping, the technological process and graphic organisers into the world of literacy. You will come away from this hands-on session with a range of creative ideas which will excite and challenge your students.

Thumbnails to Concept – introducing designing skills at VCE.
Mark Pengilley, Eltham High School
Code: S1G

This workshop aims to assist teachers in introducing students to Charles Rennie McIntosh, Frank Lloyd Wright, David Haring, Howard Arkley and more… while teaching them basic perspective drawing and designing skills.

Jewellery Design using CADCAM
Fred Carlstrom, Camplex
Code: S1H

This workshop gives an introduction to how CADCAM software can be used in the design and manufacture of jewellery. The design process of rings including shanks, settings and stones will be covered. Also a demonstration on how to design a pendant will be covered.

During the workshop their presentation will demonstrate the software in action and how to build exciting designs using the many tools and functions in ArtCAM JewelSmith which is an add-on to ArtCAM Pro so all the functions in Pro are also available to the JewelSmith user. JewelSmith has many functions specific to jewellery, like pave settings, setting creation based on stone size and shape, gem creation and gold weight calculation.

The presenter will demonstrate how you can build a ring design by assembling components, shanks, settings and stones. He will also show how you can make wax models using the Roland JWX-10 small desktop mill.

Co2 Jet Powered Rocket cars for VELS
Brian Pinches, Lowanna College
Code: S1I

THERE IS AN ADDITIONAL MATERIALS CHARGE TO BE PAID DIRECT TO THE PRESENTER ON THE DAY OF THE WORKSHOP. COST PER PARTICIPANT IS *$20.00* TO COVER THE COST OF A THEORY BOOK AND MATERIALS TO CONSTRUCT AND RACE A VEHICLE.

This is a hands-on workshop that will take technology teachers through the basics, from the design stage to the construction process, to the testing and evaluation stage. Then to the final implementation of the racing of the Co2 powered cars. This can be taught in the systems areas of technology. This is suitable for year 8, 9 and 10 students of either gender.

Saturday Session 2 2.30pm - 3.30pm

Teaching Through Robotics
Sue Inness, Modern Teaching Aids
Code: S2A
This presentation will provide a graphic illustration of how robotics can be used as the motivating tool to teach across curriculum areas (VELS!) using examples of two unique units that can form part of your year's teaching. In the first project ("Have you ever swallowed a robot?"), teachers will research the use of robots in surgery and the advances in Biomedical engineering present and future and the health issues that these robots could be used to treat. This unit offers the perfect forum for covering healthy lifestyles and the health implications of poor choices. Using LEGO© MINDSTORMS© robots and a large illustrated groundsheet teachers will create a simulation of an operation / operations that utilize robots in surgery, perform the surgery and report on the results. They will also use IT and media to create a news report / documentary on the operation and creation of the robots, evolve a corporate identity a, logo and name for the robot, film and advertisement and write a news report on this cutting edge application for robots. In the second project, ("Tell me a story") teachers, select a theme/story (either commercial or student authored) and build and program figures and scenery using control technology (robotics) and mechanical systems and some electronics. Items will be installed in "diorama" style box which is the stage that represents selected scene from the story. The total set of dioramas will combine, in a tableaux that tells the entire story and could be installed in a public place or school where students may view their completed work and possibly be on site to explain the process to other viewers.

VELS – everything you wanted to know but were afraid to ask!
Lorraine Tran, VCAA
Code: S2B
How can I write a multi-domain VELS unit? What does a VELS unit that focuses on Design, Creativity and Technology look like? How can I assess it? What are progression points? How can the annotated work samples in the VELS assessment maps help me make judgements about my students' progress? These questions and others you may have will be addressed in this session. Please bring to this session your Design, Creativity and Technology Standards, and/or Level 5 or Level 6 set of standards and any VELS units or VELS student work to share.

Silk Paper & Soft Cut Printing
Tania Di Berardino, Zart Art
Code: S2E
PLEASE NOTE: THIS WORKSHOP IS A REPEAT OF F2E
Participants will learn the technique of making silk paper – silk paper is a quick, clean technique, which will provide a luxurious surface for fashion, design and sculptural work.
After completing a piece of silk paper, participants will also learn the technique of using Soft Cut carving block to produce a repeat design. For use on paper, silk paper, fabric or used as a rubbing plate.
Participant's will then use Dual-purpose fabric paints to place their designs on to silk paper as well as paper and fabric. On completion participants will have made a sheet of silk paper, cut a repeat design using Zart Soft Cut carving block, printed using Dual purpose fabric paints on to silk paper, cotton fabric & paper, as well as using the Soft Cut block as a rubbing block.

'Wood as a resource' – Sustainable Timber Harvesting
Karen Brown & Colin Boyd, Toolangi Forest Education Service
Code: S2C
PLEASE NOTE THAT THIS WORKSHOP IS A REPEAT OF F1C
The 60 minute workshop will showcase the Design and Technology fieldtrips provided by the Toolangi Forest Education Service for teachers and students in the Toolangi State Forest, located within the Victorian Central Highlands, 75km from Melbourne.
Timber harvesting is permitted in certain areas of the State forest. We will present a PowerPoint presentation illustrating the timber harvesting process. Beginning at the logging coupe, we will investigate timber processing through to the local sawmill where the log is cut into useable timber lengths, then sold to various hardware chains. We will look at some of the properties and uses of different Victorian tree species as timber resources, explore the advances in technology that have modernised timber harvesting techniques and investigate the sustainable use of Victorian forests. Students will also discuss the alternatives to timber, comparing the impacts of different materials on the environment. Included will be short DVD on the construction of our unique Discovery Centre. If time permits we will show a 12-minute film 'Forests of Ash' which explains some of the changes to the timber industry over the past 100 years.

Learn About Technology While Playing
Annette Kennewell, Educational Experience
Code: S2D
PLEASE NOTE: THIS WORKSHOP IS A REPEAT OF F1E
Educational Experience is launching a new range of technology resources suitable for both primary and secondary students. New resources include mechanics, statics, pneumatics, electrical technology, regenerative energies, robotics, digital cameras, & control technology. Workstations will be set up for you to come along and learn about technology while playing with the new resources. This is a hands-on session demonstrating how to encourage student thinking and learning by putting technology into action. All teachers attending will receive a free sample to construct during the session.

But when do we start making things!!
Jill Livett, Overnewton College
Code: S2F
Many middle school kids find stages of the design process tedious as most of them just want to get in there and put things together. How can we help students to think more deeply about what they are doing and engage in the design process? During this workshop, we will explore what students need to know and be able to design confidently. We will also experience and plan fun activities that support and encourage students in their designing.

PICAXE – Micro-controllers for Absolute Beginners
John Glancy, School Electronic Supplies
Code: S2H
In this session John will introduce absolute beginners to PICAXE software with a focus on micro-controllers.

2007 CONFERENCE PROGRAM

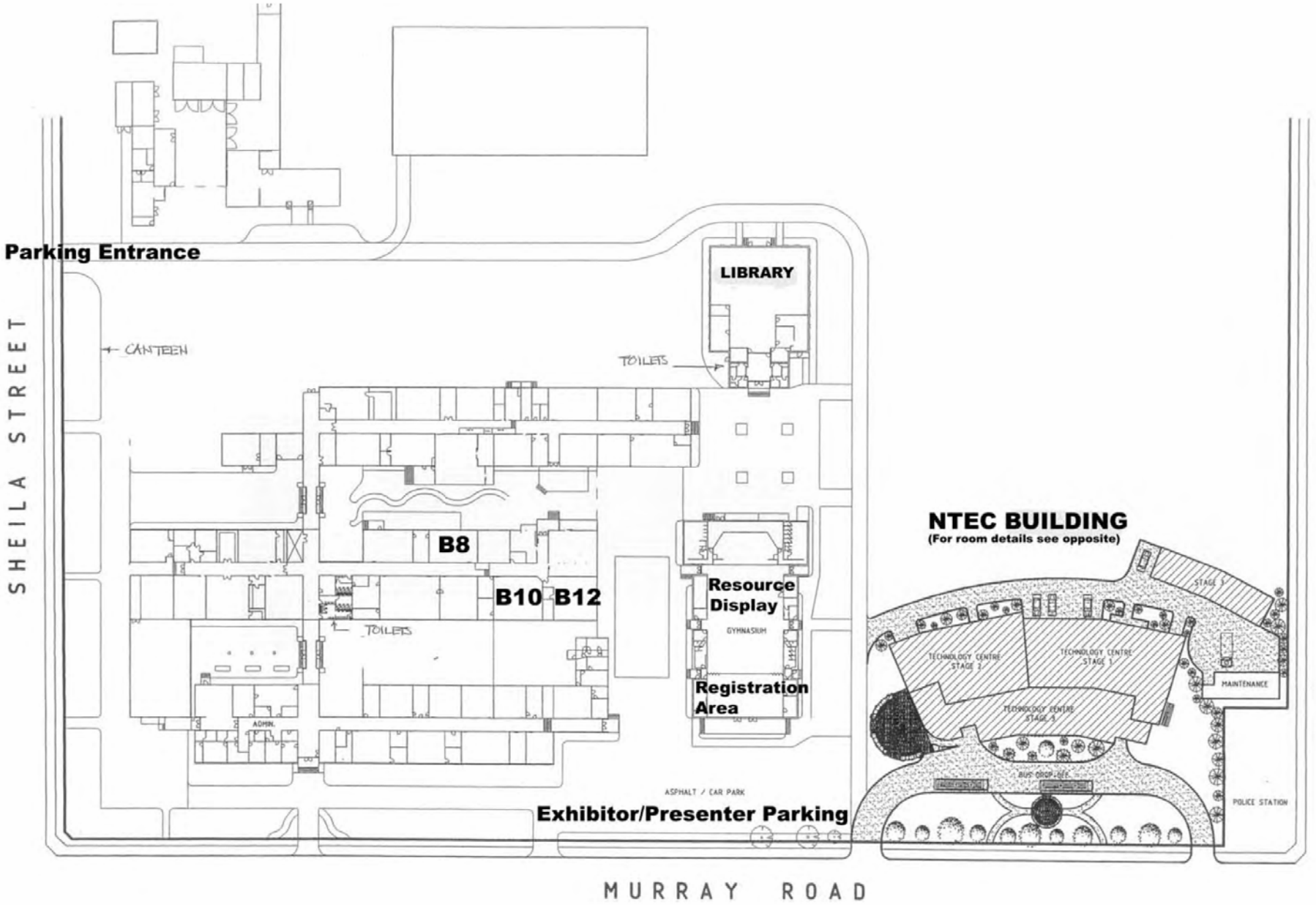
Friday May 11th

8.15-9.00	**Registration – Hall**										
9.00-9.15	**Welcome**	**Library**									
9.15-10.15	**Keynote Address:**	**Richard Henderson Library**									
10.15-10.45	**Morning Tea and Resource Display**										
10.45-11.45	**Session One**	F1 in Schools *Peter Clinton*	'OnGuard' ACEPro Safety Testing and Tracking *Bruce Lewis*	Wood as a resource – sustainable timber harvesting *Karen Brown & Colin Boyd*	PICAXE Technology *Rob Ward*	Learning About Technology While Playing *Annette Kennewell*	Tour of Ntec Facility *Daniel Knott*	Instant Fabrics in the Microwave *Anne Mitchell*	Kites in the Classroom & Wood Tongue Drums *Dean Roberts*	Model Solar Boats *Wayne Young & Ian Gardener*	**Workshop To Be Announced Please see TEAV Website for details**
	Room	F1A	F1B	F1C	F1D	F1E	F1F	F1G	F1H	F1I	
11.50-12.50	**Session Two**	RACV Energy Breakthrough *Trinity Grammar*	Building & Programming Scoreboards *Phillip Pawlowski*	Skill based Wood Projects for Years 7-10 *Glen Johnson*	A Look at Two Distinct Programs at Northland SC *Tim Beare*	Silk Paper & Soft Cut Printing *Tania Di Berardino*	Developing Technological Literacy *Dr. Mike Brown*	Pandora's Box *Bruce Sharp*	Kites in the Classroom & Wood Tongue Drums *Dean Roberts*	Hovercraft *Robert Forbes & Wayne Young*	**Workshop To Be Announced Please see TEAV Website for details**
	Room	F2A	F2B	F2C	F2D	F2E	F2F	F2G	F2H	F2I	
12.55-1.55	**Lunch and Resource Display**										
2.00-4.00	**Session Three**	VET study resources and sample SATS *Arnold Vandenhurk*	Make a Walking Robot *Neville Young*	Writing and Assessing VCE Assessment Tasks *Lorraine Tran*	Hydrogen and fuel cells technology in the classroom *Luigi Bonadio*	Making Plastic *Lee Raisbeck & Penny Chapman*	A look at engineering design & rapid prototyping *Phillip Cranswick & Trevor Rose*	Planning & creating a safe & effective technology workspace *Athanas Zivave*	A Decade of Design & Collaboration in Textiles *Ilka White*	Using Dataloggers to enhance testing *Peter Niass*	Woodworking using CADCAM *Fred Carlstrom*
	Room	F3A	F3B	F3C	F3D	F3E	F3F	F3G	F3H	F3I	F3J
End of Day	**PLEASE PLACE COMPLETED EVALUATION FORMS IN THE BOX PROVIDED AT THE LIBRARY ENTRANCE**										

Saturday May 12th

8.15-9.00	**Registration – Hall**									
9.00-9.15	**Welcome**	**Library**								
9.15-10.15	**Keynote Address:**	**Graeme Wiggins Library**								
10.15-10.45	**Morning Tea and Resource Display**									
10.50-11.10	**Launch of Course in Safe Use of Machinery in Technology Teaching - Workshop Safety Program for Technology Teachers (to be held in Library)** ***Presented by Paul O'Halloran, Department of Education, Employee Health, Occupational Health & Safety***									
11.15-1.15	**Session One**	Hydrogen and fuel cells technology in the classroom *Luigi Bonadio*	Introduction to ProDESKTOP *David Fletcher*	A look at engineering design & rapid prototyping *Phillip Cranswick*	Eccentrics Linking Learning to Thinking by Doing *Norm Stephens*	Instant Fabrics in the Microwave *Anne Mitchell*	Tales From the Tech Side *Chris Gilligan & Maureen Firth*	Thumbnails to Concept – introducing designing skills at VCE. *Mark Pengilley*	Jewellery Design using CADCAM *Fred Carlstrom*	Co2 Jet Powered Rocket cars for VELS *Brian Pinches*
	Room	S1A	S1B	S1C	S1D	S1E	S1F	S1G	S1H	S1I
1.15 – 2.15	**Lunch and Resource Display**									
2.15 – 2.25	**Prize Draw**									
2.30-3.30	**Session Two**	Teaching through robotics *Sue Inness*	VELS – everything you wanted to know but were afraid to ask? *Lorraine Tran*	'Wood as a resource' – sustainable timber harvesting *Karen Brown & Colin Boyd*	Learning About Technology While Playing *Annette Kennewell*	Silk Paper & Soft Cut Printing *Tania Di Berardino*	But when do we start making things!! *Jill Livett*	PICAXE for Absolute Beginners *John Glancy*	**Workshop To Be Announced Please see TEAV Website for details**	**Workshop To Be Announced Please see TEAV Website for details**
	Room	S2A	S2B	S2C	S2D	S2E	S2F	S2H		
End of day	**PLEASE PLACE COMPLETED EVALUATION FORMS IN THE BOX PROVIDED AT THE LIBRARY ENTRANCE**									

Northland Secondary College Map



TEAV CONFERENCE 2007 - NORTHLAND SECONDARY COLLEGE – Friday 11th & 12th May, 2007
CONFERENCE REGISTRATION FORM

Name: _____

School: _____

Address: _____

Suburb: _____ Postcode: _____

Work Ph: ( ) _____ Fax: ( ) _____

Mobile: _____

E-mail** _____

Please be sure to include a current email address as CONFIRMATION LETTERS will only be sent via e-mail

Delegate Registration Details – Please tick appropriate boxes

1. Attendance:	❑ Friday only		❑ Saturday only		❑ Both days
2. Year Levels taught:	❑ Prep-4	❑ 5-6	❑ 7-8	❑ 9-10	❑ VCE ❑ VET ❑ VCAL
3. Technology area taught:	❑ Textiles ❑ Jewellery	❑ Wood ❑ Metal	❑ Plastic	❑ Electronics	❑ Auto ❑ Mechanical Systems
4. School type:	❑ Government		❑ Catholic		❑ Independent
5. Region:	❑ Barwon South Western	❑ Central Highlands Wimmera	❑ Eastern Metro	❑Gippsland	❑ Goulburn North Eastern
	❑ Northern Metro	❑ Southern Metro	❑ Western Metro	❑ Hume	❑ Loddon Campaspe Mallee

Payment Details - Please indicate your registration type by ticking appropriate box

Early Bird (Payment to be received by TEAV *BEFORE* 27th April 2007)	❑ 1 Day Member $145.00	❑ 1 Day Non Member $159.50
	❑ 2 Day Member $250.00	❑ 2 Day Non Member $275.00
Regular Payment (Payment received *AFTER* 27th April 2007)	❑ 1 Day Member $170.00	❑ 1 Day Non Member $187.00
	❑ 2 Day Member $270.00	❑ 2 Day Non Member $297.00
Student Payment	❑ 1 Day Student $70.00	❑ 2 Day Student $130.00

Cancellation Policy: If you need to cancel your registration, please contact TEAV at least 48 hours prior to the event. **The full event fee will be charged if cancellations are made within 48 hours.**

Please invoice my school ❑ Please invoice myself ❑ Please find enclosed payment ❑ Purchase Order _____

Credit Card Number _ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _ Expiry Date _____ / _____

Name on card _____ Signature _____

TEAV 150 Palmerston St Carlton VIC 3053
Ph: (03) 9349 1538 Fax: (03) 9349 5391 E: admin@teav.vic.edu.au

This registration form becomes a tax invoice for GST purposes on receipt of payment. ABN 97 315 356 383

All prices are GST inclusive

TEAV Conference 2007 - Northland Secondary College – Friday 11th & 12th May, 2007
WORKSHOP SELECTION FORM

NAME: _____ **E-MAIL** _____

Please indicate your preferred sessions by numbering the workshops from 1-10 on the form below. Where a session has room for a limited number of participants, delegates will be placed in order, according to the date the form is received. Program details are correct at the time of printing but may be changed before the conference.

Friday May 11

Session	Code	Title	Presenter	Preference (1-10) for each session
Session One Workshops 10.45-11.45	F1A	F1 in Schools	Peter Clinton	
	F1B	'ÓnGuard' ACEPro Safety Testing and Tracking	Bruce Lewis	
	F1C	Wood as a resource – sustainable timber harvesting	Karen Brown & Colin Boyd	
	F1D	PICAXE Technology	Rob Ward	
	F1E	Learning About Technology While Playing	Annette Kennewell	
	F1F	Tour of the Ntec Facility at Northland SC	Daniel Knott	
	F1G	Instant Fabrics in the Microwave	Anne Mitchell	
	F1H	Kites in the classroom & Wood Tongue drums	Dean Roberts	
	F1I	Model Solar Boats	Wayne Young & Ian Gardener	
Session Two Workshops 11.50-12.50	F2A	RACV Energy Breakthrough	Trinity Grammar	
	F2B	Building & Programming Scoreboards	Phillip Pawlowski	
	F2C	Skill based Wood Projects for Years 7-10	Glen Johnson	
	F2D	A Look at Two Distinct Programs at Northland SC	Tim Beare	
	F2E	Silk Paper & Soft Cut Printing	Tania Di Berardino	
	F2F	Developing Technological Literacy	Mike Brown	
	F2G	Pandora's Box	Bruce Sharp	
	F2H	Kites in the classroom & Wood tongue drums (REPEAT OF F1H)	Dean Roberts	
	F2I	Hovercraft	Robert Forbes & Wayne Young	
Session Three Workshops 2.00-4.00	F3A	VET study resources & sample SATS	Arnold Vandenhurk	
	F3B	Make a Walking Robot	Neville Young	
	F3C	Writing & Assessing VCE Assessment Tasks	Lorraine Tran	
	F3D	Hydrogen & Fuel Cells Technology in the Classroom	Luigi Bonadio	
	F3E	Making Plastic	Lee Raisbeck & Penny Chapman	
	F3F	A Look at Engineering Design & Rapid Prototyping	Philip Cranswick & Trevor Rose	
	F3G	Planning & Creating a Safe & Effective Technology Workspace	Athanas Zivave	
	F3H	A Decade of Design & Collaboration in Textiles	Ilka White	
	F3I	Using Dataloggers to Enhance Testing	Peter Niass	
	F3J	Woodworking using CADCAM	Fred Carlstrom	

Saturday May 12

Session One Workshops 11.15-1.15	S1A	Hydrogen & Fuel Cells Technology in the Classroom (REPEAT OF F3D)	Luigi Bonadio	
	S1B	Introduction to ProDESKTOP	David Fletcher	
	S1C	A Look at Engineering Design & Rapid Prototyping (REPEAT OF F3F)	Philip Cranswick	
	S1D	Eccentrics Linking Learning to Thinking by Doing	Norm Stephens	
	S1E	Instant Fabrics in the Microwave (REPEAT OF F1G)	Anne Mitchell	
	S1F	Tales From the Tech Side	Chris Gilligan & Maureen Firth	
	S1G	Thumbnails to Concept	Mark Pengilley	
	S1H	Jewellery Design using CADCAM	Fred Carlstrom	
	S1I	Co2 Jet Powered Rocket Cars for VELS	Brian Pinches	
Session Two Workshops 2.30-3.30	S2A	Teaching Through Robotics	Sue Inness	
	S2B	VELS - everything you wanted to know but were afraid to ask!	Lorraine Tran	
	S2C	Wood as a resource – sustainable timber harvesting (REPEAT OF F1C)	Karen Brown & Colin Boyd	
	S2D	Learn About Technology While Playing (REPEAT OF F1E)	Annette Kennewell	
	S2E	Silk Paper & Soft Cut Printing (REPEAT OF F2E)	Tania Di Berardino	
	S2F	But When Do We Start Making Things?	Jill Livett	
	S2G	PICAXE for Absolute Beginners	John Glancy	

Fax form to TEAV (03 9349 5391)
OR Post form to: TEAV 150 Palmerston St Carlton VIC 3053
Ph: (03) 9349 1538 **Fax:** (03) 9349 5391 **Email:** admin@teav.vic.edu.au