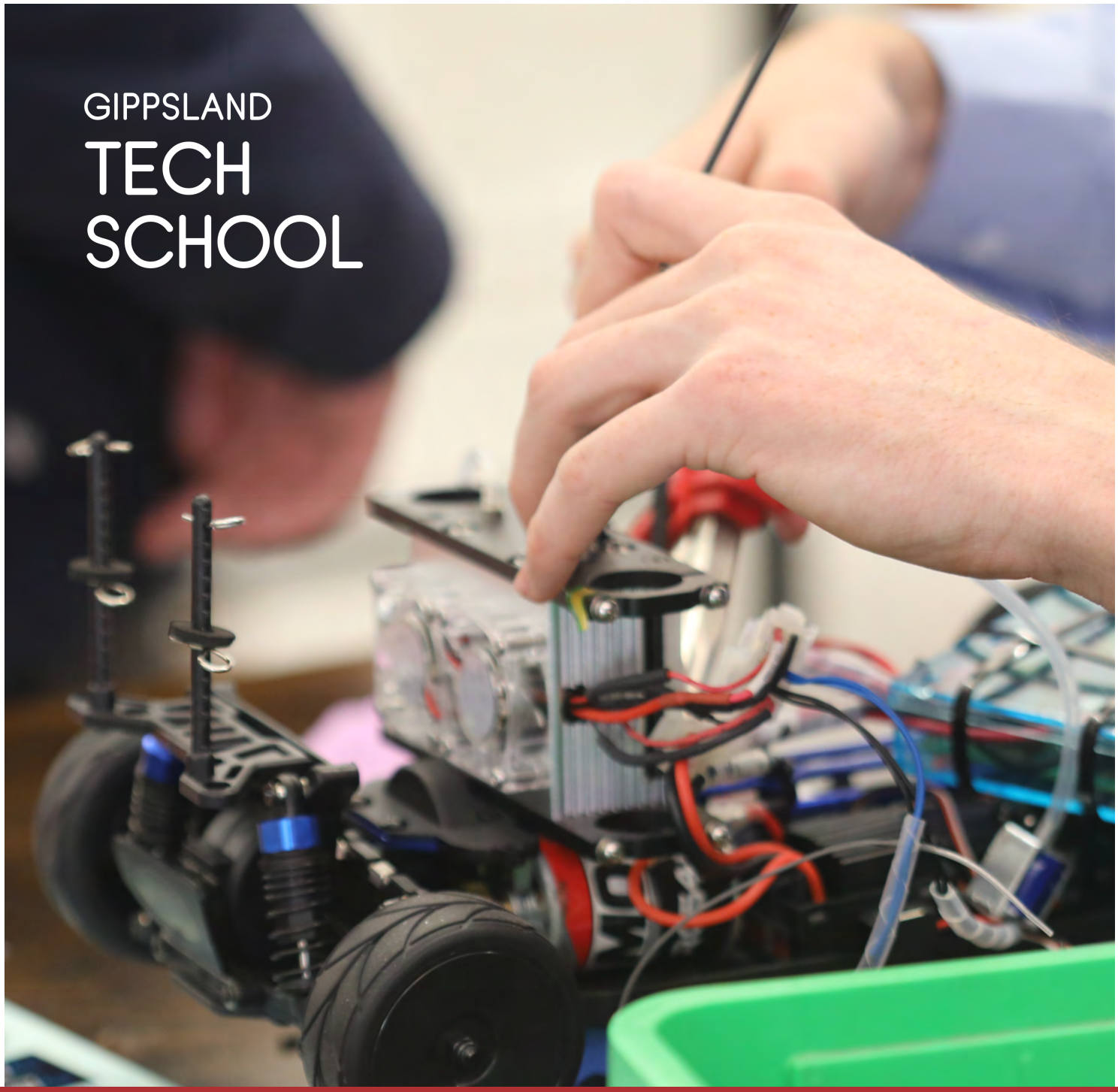
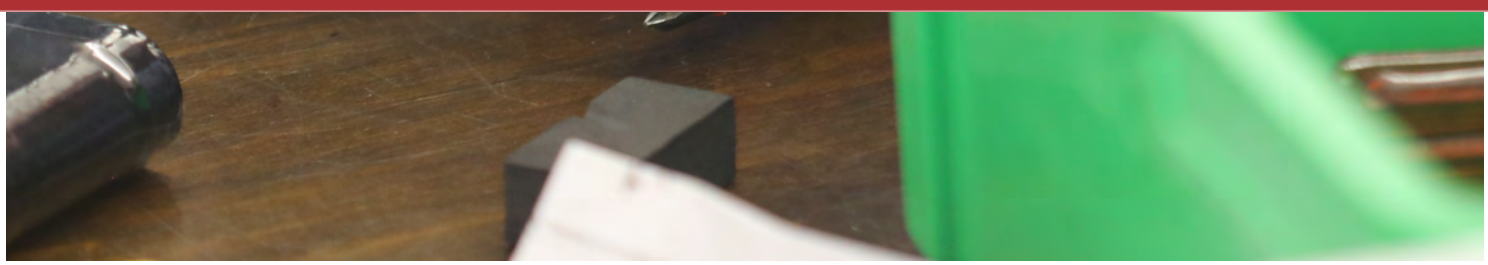


GIPPSLAND MOBILE TECH SCHOOL

Program Guide 2027



TAFE GIPPSLAND

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VICTORIA State Government | Department of Education

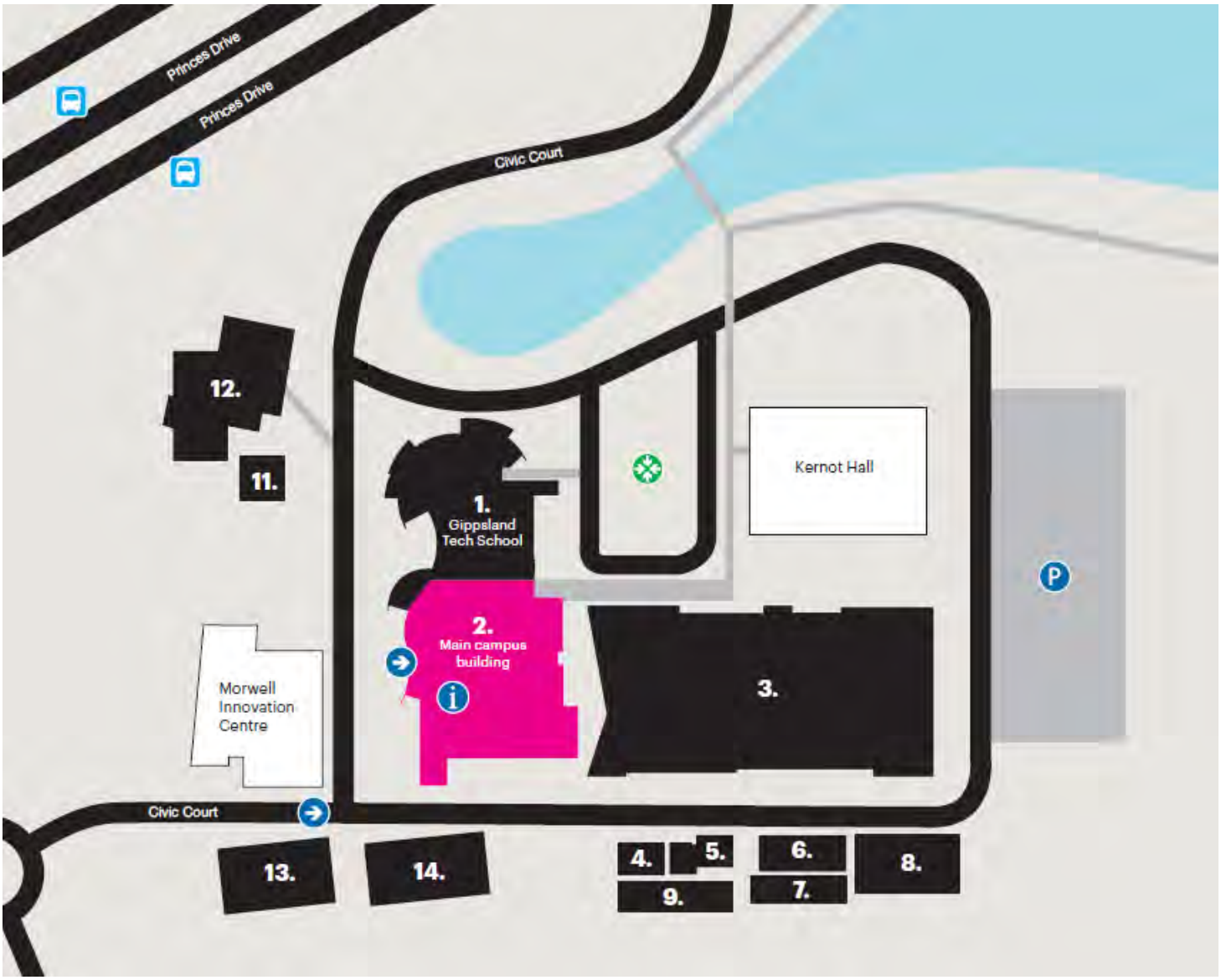
Contact Us

Corner Princes Drive & Monash Way Morwell VIC 3840

03 5120 4522

enquiries@gippslandtechschool.vic.edu.au

www.gippslandtechschool.vic.edu.au/mobile-tech-school



GIPPSLAND TECH SCHOOL

TAFE GIPPSLAND

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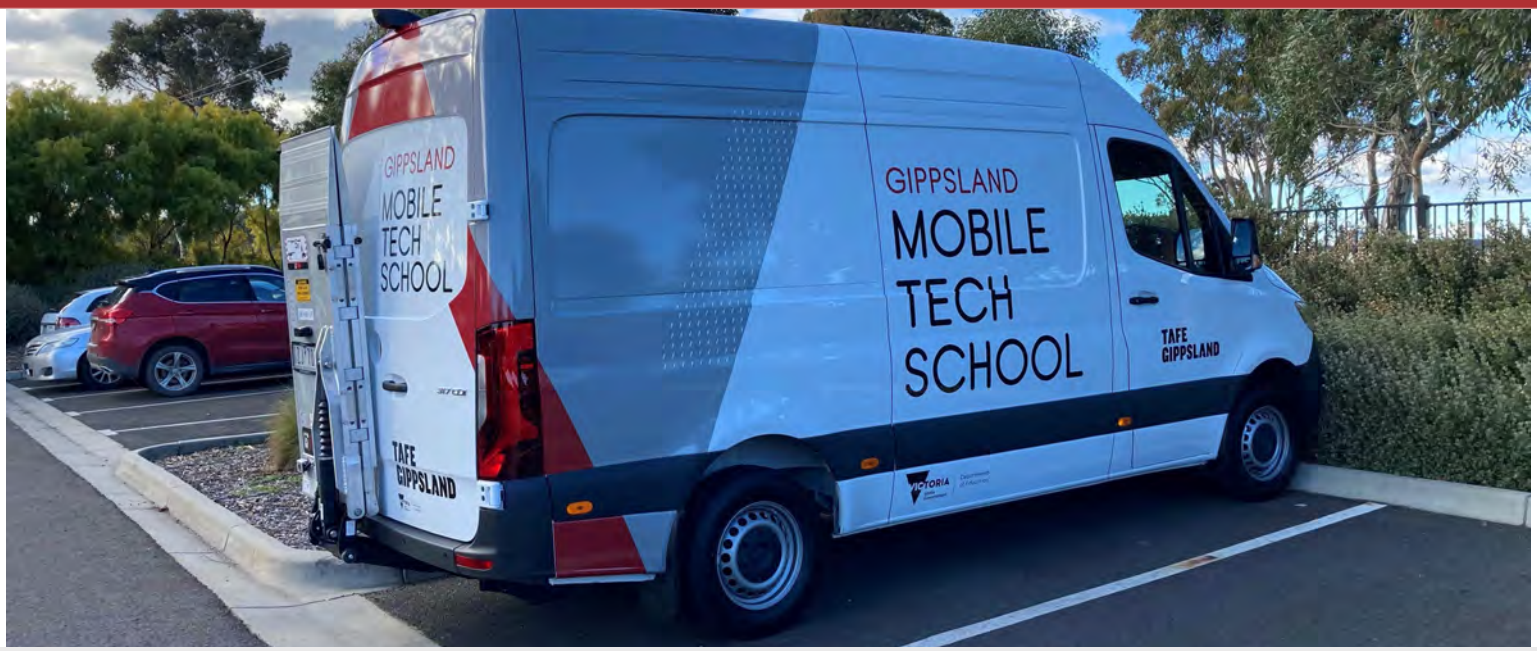
About Us



The Gippsland Mobile Tech School is a high-tech learning environment, with innovative education programs linked with local industry, delivering real world learning to secondary school students in Wellington and East Gippsland shires.
Students from participating schools are able to access the Tech School throughout the year for specialised programs. Our Mobile Tech School connects secondary schools to new and emerging technologies, careers, curriculum, and real-world learning opportunities.

The Gippsland Tech School is committed to challenging students to take charge of their learning and to push themselves to reach their full potential. To achieve this goal, we have developed a Teaching and Learning Framework to support our partner schools to understand how we can positively impact key educational goals, aligned with priority areas in each of our partner schools. The framework is based on the Design Thinking pedagogical model and we are committed to supporting educators and students in Gippsland to experience this innovative model in a practical hands-on approach. Our Teaching and Learning Framework has been developed in consultation with our stakeholders with guidance from the Gippsland Tech School advisory committee.

Paul Boys – *Director – Gippsland Tech School and Mobile Tech School*

USING THIS PROGRAM GUIDE

Our 2027 program guide has been structured to reflect the types of programs we offer and their increasing complexity by year level, and also to showcase other specialist STEAM learning opportunities that are available to both students and teachers outside normal program delivery.

Our goal is to help schools embed experiences with the Gippsland Mobile Tech School into their everyday learning so students can associate program experiences with future learning and work opportunities. We can do this by tailoring our programs to individual school or class needs, modifying programs to be delivered by breaking them down into smaller repeat visits or providing pre and post classroom materials to get the most out of each program.

We encourage teachers to consider their choice of program(s) and learning opportunities, not only in the context of their own classroom curriculum, but also what may be possible for their students in the future with well developed STEAM-related skills. Please contact us to discuss any variations in program structure that might help you deliver the best experience possible to your students.

Each program outline shows the connection to Industry, Victorian Curriculum, Technologies Used, Year Level, Duration and Maximum Student Numbers. These connections aim to provoke discussion amongst educators around how Tech School programs connect students to industry practice with a clear connection to future skills that will be a part of new and emerging industries.

If you are needing customisation within any of our offered programs, or have a suggestion for future program development, please contact Michelle Colwell at mcolwell@gippslandtechschool.vic.edu.au.

Please note: some images throughout this program guide were created by the use of Artificial Intelligence.

PROGRAM OFFERINGS 2027

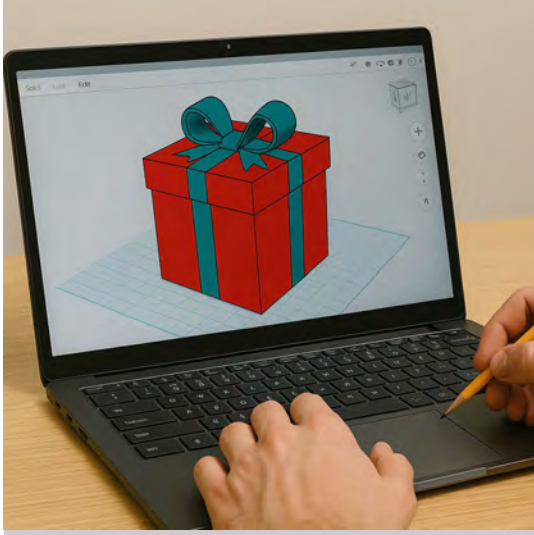
PAGE	PROGRAM	DURATION
6	**3D Modelling and Design** Students will use the Design Thinking process to create a piece of digital art using virtual sculpting or virtual painting mediums that meet the requirements of their "client".	2 Hours
7	**AI Art** In this program, students will discuss the ethics of AI in art and be introduced to how AI works. Students will be given the opportunity to safely experiment whilst creating their own piece of AI art.	1 Hour
8	**Chemistry - but not as you know it** In this program, students will engage with emerging technologies to safely explore a virtual laboratory environment and practice basic laboratory skills. Students will use atomic theory to virtually assemble elements and view the structures of various elements and compounds using augmented reality. Students will perform virtual experiments that demonstrate chemical changes by means of colour change, temperature change, gas production, or the formation of precipitates.	1 - 4 Hours
9	**Cybersafety** Students will investigate the importance of secure passwords/ passphrases, how to create them, and why they should be changed regularly. They will also understand their online "brand" and the importance of protecting this with regards to future employment. Understanding the importance of managing personal data online, and tools and techniques to stay protected online will also be covered through the program.	1 - 4 Hours
10	**Digital Art - Making Movies** Using a range of film and sound technologies, students will be challenged to harness their creativity to create their own short film and soundtrack.	2 - 5 Hours
11	**Digital Skills in Agriculture** Students will be introduced to the use of sensor technologies in agriculture and will create and test simple sensors in an online platform.	2 Hours
12	**Digital Technologies** This program covers a variety of Digital Technology skills by challenging students to consider rules in digital systems, cyber security vulnerabilities, and algorithmic thinking.	4 Hours
13	**Everyday Maths** Students will investigate everyday mathematical principles in a range of practical activities and participate in experiments to collect and analyse data from everyday tasks.	1 Hour
14	**Grabbing the snake by the tail - an introduction to Python** The program will begin with students learning about how the world of work is changing and the skills that will be most important for them as they move into the workforce. Students will use iPads to write a quiz using "Python" coding that welcomes a students, asks several questions and calculates a score at the end. Students will be able to test their quizzes on each other during class. This will then allow them to see the use of coding and how digital realities are being used in workplaces.	1 Hour

PROGRAM OFFERINGS 2027

PAGE	PROGRAM	DURATION
15	**Hands on Science** Students explore how technology is influencing Space Science and Exploration, learn about the solar system and complete experiments with light, using a variety of lenses and prisms.	2 Hours
16	**Industry Tech Taster** Students will learn about how technology is changing the world of work and why this matters to them. They will undertake activities that will expose them to industry-changing technologies and new ways of problem solving.	1 - 2 Hours
17	**Physics** This program explores topics in physics for year 10 - VCE students. Part A - The wave nature of light: students will conduct experiments, collect, and analyse data by recreating Thomas Young's famous double slit experiment. Part B - Kinematics: students will investigate the motion of a cart along an inclined track to gain an understanding of Newtons Laws and the relationship between parameters such as displacement, velocity, and acceleration.	1 - 3 Hours
18	**Smart and Safe - empowering business success** in this program, students will use the Design Thinking process to tackle a health and safety, productivity, or operational challenge from a local Gippsland industry. They will begin by learning about the industry and some of the challenges they face in their everyday work. Students will then undertake a variety of masterclasses to build their skills to tackle these challenges. The final part of the day will see students prototyping solutions and pitching their ideas to make the workplace a better place to be.	1 Day
19	**Sports Science** The impact of advancing technology and innovation is changing how we train and play sport. In this program, students will explore how science and technology are impacting the sports and fitness industries. Through hands-on activities, students will experience new ways to exercise and assess performance and understand the impact of new and developing technology on sport and exercise.	1 - 4 Hours
20	**Sustainable Futures** Students will be introduced to different types of renewable energy and investigate the advantages and disadvantages of each. They will conduct experiments using solar, wind, and hydrogen energy, expanding their knowledge of energy types and energy conversions.	1 - 4 Hours
21	**Teacher Professional Learning**	Variable

NOTE: Most Tech School programs can be tailored to your students learning requirements, including VCE/VM. Please contact us to discuss.

3D Modelling and Design



The world of digital design is opening up to students due to new technologies and user-friendly software. Students interested in design, art, architecture or engineering, will need to understand 3D modelling software to get ahead. The ideas you have won't go far without the right tools. There's nothing more frustrating than having a great idea that you can't turn into a model. 3D models engage your audience and help them see your ideas and designs. Affordable design mediums allow your ideas and designs to be translated into virtual models.

Program Summary
In this program, students will interview a 'client' to help get to know them and they feel is important. They will use the Design Thinking process to create a piece that could be used to present as a gift to the client. They will sketch and model their solution, adjusting as necessary. They will then design and manufacture their product using virtual mediums.

Taking part in this program, students will collaboratively:

- Be introduced to the Design Thinking process
- Transform a 2D design to 3D item
- Create a LEGO representation of their design
- Create a virtual design of their 3D item

Career Links
Designers, Architects, Engineers, Technologists, Artisans

INDUSTRY FOCUS AREA
Advanced Manufacturing

VICTORIAN CURRICULUM LINKS
Science, Design Tech, Capabilities, Visual Arts

TECHNOLOGY USED
iPads, LEGO, Virtual Reality (VR) Headsets

YEAR LEVEL
7 - 10

DURATION
2 hours

MAX STUDENT NUMBERS
20

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AI Art

AI art generation is a dynamic and evolving field that offers students the opportunity to explore the intersection of technology and creativity, grapple with ethical questions, and prepare for future job opportunities in an increasingly AI-driven world. It also fosters critical thinking and interdisciplinary learning, making it a valuable topic of study for students.

Program Summary
Students will discuss the ethics of AI in art and be introduced to how AI works. Students will be given the opportunity to safely experiment whilst creating their own piece of AI art.

Taking part in this program, students will collaboratively:

- Discuss art and AI ethics
- Generate their own piece of AI art

Career Links
Animator, Creative Director, Industrial Engineer, Multimedia Artist, Professional Artist, Painter

INDUSTRY FOCUS AREA
Advanced Manufacturing

VICTORIAN CURRICULUM LINKS
Visual Arts, Digital Tech, Media Arts, Visual Communications, Capabilities

TECHNOLOGY USED
iPads, AI

YEAR LEVEL
9-10

DURATION
1 hour

MAX STUDENT NUMBERS
28

Chemistry - but not as you know it

Have you ever thought about why food tastes like it does, or how shampoo and conditioner work? Chemistry explains how food tastes, and even how your shampoo keeps your hair shiny. What about gathering evidence to solve crimes, or inventing eco-friendly materials? Chemists are the heroes behind the scenes making it all happen. If you love asking "why?" or "how?", chemistry rewards curiosity. Plus, many chemistry careers are in demand, exciting, and full of possibilities.

Program Summary
In this program, students will engage with emerging technologies to safely explore a virtual laboratory environment and practice basic laboratory skills. Students will use atomic theory to virtually assemble elements, and view the structures of various elements and compounds using augmented reality. Students will perform virtual experiments that demonstrate chemical changes by means of colour change, temperature change, gas production, or the formation of precipitates.

Taking part in this program, students will collaboratively:

Chemistry A - lab skills and safety (1-1.5 hours)

- Engage in safe laboratory practices and perform basic laboratory skills within a VR environment

Chemistry B - exploring atomic structures (1 hour)

- Explore the atomic structure of materials using augmented reality and other digital applications

Career Links
Cosmetic Chemist, Forensic Scientist, Food Chemist, Environmental Chemist, Space Chemist

INDUSTRY FOCUS AREA
Advanced Manufacturing, Food and Fibre, Health, New Energy

VICTORIAN CURRICULUM LINKS
Science, Capabilities

TECHNOLOGY USED
Virtual Reality, Augmented Reality

YEAR LEVEL
7 - 10

DURATION
1 - 2.5 hours

MAX STUDENT NUMBERS
20

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Cyber Safety

Digital technologies have become a ubiquitous part of our lives. We live more and more of our lives online for school, work, and in our personal time. Through the world wide web, we can connect with people from across the world to spread information, play games, and share cat memes. We have the opportunity to be more connected than at any other time through history, creating whole new digital communities in which we can interact. However, with this connection also comes challenges. While we consciously teach young people to look both ways before crossing the road and not to talk to strangers, the same kind of safety advice is often overlooked in these online communities. Students need to understand how to be a positive contributor to these communities and how to keep themselves safe while online.

Program Summary
Who are you online?
Why shouldn't you use the same password for everything?
Why does that Nigerian Prince need my help?
These are all questions that will be explored through this program.

Students will investigate the importance of secure passwords/passphrases, how to create them, and why they should be changed regularly. They will also understand their online 'brand' and the importance of protecting this with regard to future employment with the knowledge that once something is online, it is online forever.

Understanding the importance of managing personal data online and tools and techniques to stay protected online will also be covered through the program.

Taking part in this program, students will collaboratively:

Cyber Safety - A - Terms of Service (1 hour)

- Complete a quiz
- Students will complete an exercise about the ToS of popular software programs
- Discuss the ethics associated with cyber security and online presence

Cyber Safety - B - Secure your information (1 hour)

- Students will undertake a password check/cracking activity to investigate the importance of secure passwords and passphrases, how to create them, and why they should be changed regularly

Cyber Safety - C - Digital reputation (1 hour)

- Students will search online for information related to classmates. This will help them understand their online brand and the importance of protecting this for future employment, with the knowledge that once something is online it is there forever

Cyber Safety - D - Escape Room (1 hour)*

- Students digital information has been compromised and the only way to redeem their digital identity is to utilise the skills learned during the day to "break into" a secure "box" to retrieve a "key" to their success/future

**The Cyber Safety program is designed to be run in its entirety (A, B, C, D) in one day. However, to fit into a school timetable, it can be modified by breaking into segments.*

Career Links
These skills apply to all online interactions, in students' school, work, and private lives.

INDUSTRY FOCUS AREA
All

VICTORIAN CURRICULUM LINKS
Ethical Capability, Critical and Creative Thinking, Personal and Social Capability, Science, Digital Tech

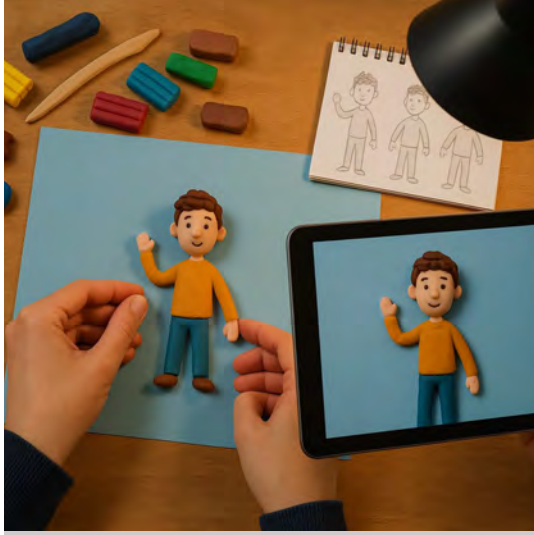
TECHNOLOGY USED
iPad

YEAR LEVEL
7 - 10

DURATION
1 - 4 hours

MAX STUDENT NUMBERS
28

Digital Art - Making Movies



The link between art and technology is not always clear. There are many varied career paths available for creatives in technology-centric fields, and a diverse range of creative industries that use advanced technologies to achieve outcomes. Students are often unaware these careers exist and what skillets and education is required to excel in these fields. This program aims to start addressing that knowledge.

Program Summary
Students will be challenged to harness their creativity in this program as they create their own original short film and soundtrack. Throughout this program, students use media technologies and extend the use of media elements such as sound, movement, and lighting. They will use a range of film and sound technologies as they explore planning, composition, and creation of short films.

Taking part in this program, students will collaboratively:

Digital Art - A *(2 hours)*

- Introduction to stop motion animation
- Creation of a storyboard
- Preparation of props
- Commence filming stop motion animation

Digital Art - B *(2 hours)*

- Complete filming of stop motion animation
- Edit animation using iMovie software on iPad
- Create a short musical piece soundtrack
- Present work to an audience

Career Links
Web designer, Film and Video Editor, Industrial Designer, Multimedia Artist, Animator, Medical Illustrator

INDUSTRY FOCUS AREA
Digital Communications

VICTORIAN CURRICULUM LINKS
Visual Arts, Digital Tech, Design Tech, Media Arts, Capabilities, Science, Visual Communications, The Arts

TECHNOLOGY USED
Stop Motion and iMovie software, iPads, Garageband software, LEGO, and design materials

YEAR LEVEL
7 - 10

DURATION
2 - 5 hours

MAX STUDENT NUMBERS
24

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Digital Skills in Agriculture

Careers in agriculture are not restricted to traditional farmers. With decreased availability of arable land, due to urban sprawl and population growth, there is increasing pressure to grow, feed, and clothe people on a smaller footprint. This program introduces students to technology-based careers in the agriculture and horticulture sectors and encourages them to think of innovative ways to solve problems currently being faced by farmers.

Program Summary
In this program, students will be introduced to the use of sensor technologies in agriculture and will create and test simple sensors (years 7-8) or complex sensors (years 9-10) online.

Taking part in this program, students will collaboratively:

Digital Skills in Agriculture - A (2 hours)

- Use TinkerCAD software on iPads to create a simple sensor

Digital Skills in Agriculture - B (2 hours)

- Use TinkerCAD software on iPads to create a complex sensor

Career Links
Electronic Engineering Technicians

INDUSTRY FOCUS AREA
Electronics in Agriculture

VICTORIAN CURRICULUM LINKS
Science, Design Tech, Capabilities

TECHNOLOGY USED
iPads, TinkerCAD software

YEAR LEVEL
7 - 8 (A)
9 - 10 (B)

DURATION
2 hours

MAX STUDENT NUMBERS
28

Digital Technologies

Ever wanted to turn your creativity into a high-paying, global job? Do you like playing video games, using apps and websites, solving puzzles or creating special effects? Sounds like a career in a game and multimedia development could be for you. It's a fast-growing digital industry with endless chances to invent new things. Digital creators are needed by companies everywhere, and the pay is good. The bonus is that you make your own art and stories, and learn new skills every single day. What's not to like about that?

Program Summary

This day aims to cover a variety of digital technology skills by challenging students to consider rules in digital systems, cyber security vulnerabilities, and algorithmic thinking.
Students will begin the program by identifying rules in game systems and cyber security challenges that these games may present. They will then be introduced to a design challenge on which students focus the remainder of their work. The challenge will help them understand and develop pseudo-code to plan their work, introduce them to the "minimum viable product" concept of design, and emphasis the importance of evaluation and iteration in design.
Students conclude by designing version 1 of a game to meet their "clients" needs, taking into account the learning of the day.

Taking part in this program, students will collaboratively:

Digital Technologies - A (1 hour)

- Students will learn some digital terminology, and discuss cyber risks identified.
- Introduction to a design challenge

Digital Technologies - B (1 hour)

- Students will introduced to algorithms and pseudocode flowcharts.
- Learn basic features of MakeCode Arcade Platform

Digital Technologies - C (1 hour)

- Learn how to create different aspects of a game with coding in MakeCode Arcade
- Introduction to the concept of minimum viable product

Digital Technologies - D (1 hour)

- Students will develop a game prototype that will be tested and refined according to their "clients" design specifications

Career Links

Video Game designer, Graphic Designer, Video Game Artist, Cyber Security Analyst, IT Systems Administrator, IT Security Analyst, Technical Engineer

INDUSTRY FOCUS AREA

All

VICTORIAN CURRICULUM LINKS

Digital Technologies

TECHNOLOGY USED

Students personal laptop, iPads

YEAR LEVEL

9

DURATION

4 hours

MAX STUDENT NUMBERS

28

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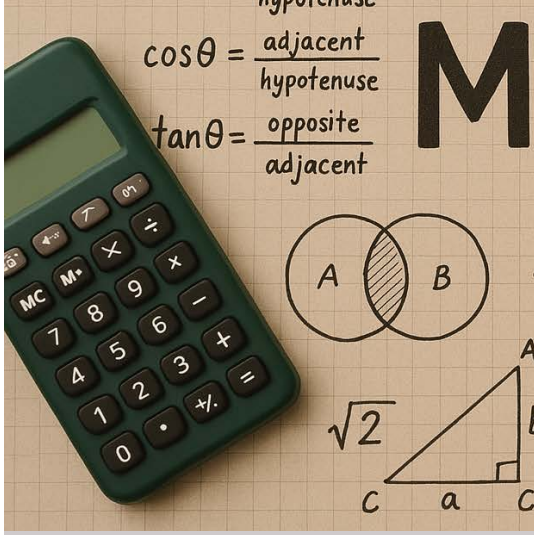
Everyday Maths

Mathematics is not just an abstract activity but is present in everyday activities and is a useful tool to understanding the world around us. Mathematics is everywhere - it can be used to analyse data, identify and predict patterns, and is a vital tool in developing problem-solving skills. It is an indispensable tool in many professions - engineers and scientists could not operate without it. It is important for chefs, chemists, builders, accountants, and nearly every profession one could imagine.



Program Summary
Students will investigate mathematical principles in a range of practical activities. They will partake in experiments, collecting and analysing data, and some activities that involve sports equipment.

Taking part in this program, students will collaboratively:

Everyday Maths - A (1 hour)

- Use a jump mat to determine the relationship between time of flight and height jumped
- Use of spreadsheet on a iPad to perform multiple repetitive calculations
- Participate in short practical activities / brain teasers that explore the concept of gravity and problem-solving different perspectives

Everyday Maths - B (1 hour)

- Use speed gates to investigate the relationship between average and instantaneous distance and speed
- Use of spreadsheet on a iPad to perform multiple repetitive calculations
- Participate in short practical activities / brain teasers that explore the concept of infinity

Everyday Maths - C (1 hour)

- Pythagoras Theorem will be demonstrated by manipulating 2D shapes created by a laser cutter
- Participate in short practical activities that demonstrate the application of Pythagoras Theorem
- Work in small teams to solve puzzles that requires matching completed mathematical equations

Everyday maths - D (1 hour)

- Use Garageband software on iPads to explore the relationship between notes in a music scale and frequency
- Participate in short practical activities that explore the concept of exponential growth

Career Links

Artisans: machinery operators, electricians, carpenters, chefs
Designers: architects, draftsperson
Engineers: civil, construction, electrical, mechanical
Scientists: chemists, physicists, biologists, sports, environmental
Professionals: accountants, sports coaches, health care

INDUSTRY FOCUS AREA
All

VICTORIAN CURRICULUM LINKS
Science, Capabilities, Maths, Physical Education, Digital Tech

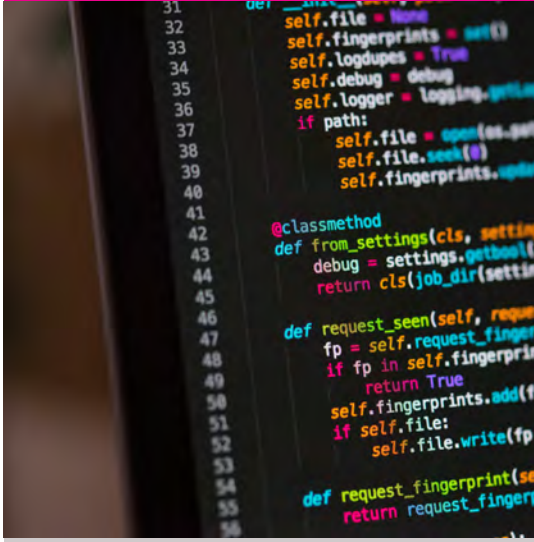
TECHNOLOGY USED
Jump mats, Speed gates, iPads, Numbers, Garageband software, Physics toolbox software

YEAR LEVEL
7 - 8 (A, B)
9 - 10 (C, D)

DURATION
1 hour

MAX STUDENT NUMBERS
28

Grabbing the snake by the tail - an introduction to Python



Technology is a disruptive force which has always led to changes in the way that people work and the types of jobs that are in demand. This change is happening more often as the increased pace of technological development impacts many workplaces. We have seen changing technologies and a reduction in traditional industries have a dramatic impact on Gippsland. This means that todays students need to develop skills that will allow them to be adaptable and to meet unforeseen challenges and opportunities in their lives. They also need to be open to new experiences and to understand how the world of work is changing around them.

Program Summary

The program will begin with students learning about how the world of work is changing and the skills that will be most important for them as they move into the workforce. Students will use iPads to write a quiz using Python coding that welcomes a student, asks several questions, and calculates a score in the end. Students will be able to test their quizzes on each other during class. This will then allow them to see the use of coding and how digital realities are being used in workplaces.

Taking part in this program, students will collaboratively:

- Design and build a quiz using Python coding
- Share their quiz with other students
- Reflect on learning

Career Links

AI Ethics Specialist, Automation Tester, Data Science & Product Manager, Automation Engineer, Analyst

INDUSTRY FOCUS AREA

IT and Technology

VICTORIAN CURRICULUM LINKS

Science, Maths, Digital Tech, Design Tech, Capabilities

TECHNOLOGY USED

iPads

YEAR LEVEL

7 - 8

DURATION

1 hour

MAX STUDENT NUMBERS

28

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Hands on Science

Science allows us to answer interesting and important questions about the biological, physical, and technological world. Science allows us to make sense of our world by exploring the unknown. Science challenges us to investigate universal mysteries, make predictions, and solve problems. Scientific knowledge is contestable and is revised, refined, and extended as new evidence arises.
'Hands on Science' provides opportunities for students to understand important concepts and processes. This program introduces students to practices used to develop scientific knowledge, the contribution of science to our culture and society, and its application in our lives. Possessing such skills allows students to make informed decisions about local, national, and global issues, and to pursue science-related careers if they elect to.

Program Summary
This program will expose students to careers in science and plant the seed for a future career in STEAM. Students will learn about the unique environment of the International Space Station and consider the use of mixed realities in learning about space and training astronauts. They will learn about the properties of light when conducting experiments.

Taking part in this program, students will collaboratively:

- Explore the International Space Station in virtual reality (VR) headsets
- Use an optics kit to understand the principles of light

Career Links
Space science, engineering, robotics, computing, space medicine, communications

INDUSTRY FOCUS AREA
Space Science, Engineering

VICTORIAN CURRICULUM LINKS
Science, Maths, Capabilities

TECHNOLOGY USED
Virtual reality, iPads, Optics equipment

YEAR LEVEL
7 - 8

DURATION
2 hours

MAX STUDENT NUMBERS
20

Industry Tech Taster

Technology is a disruptive force which has always led to changes in the way that people work and the types of jobs that are in demand. This change is happening more and more rapidly with the increased pace of technological development. We have seen changing technologies offer up new opportunities for young people in Gippsland. This means that today's students need to develop skills that will allow them to be adaptable to meet future challenges and opportunities in their lives. They also need to be open to new experiences and to understand how the world of work is changing in response to these technologies.

Program Summary

The program will begin with students learning about how the world of work is changing and the skills that will be most important for them as they move into the workforce.

Students will then rotate through two activities which will expose them to industry-changing technologies and new ways of problem solving.
To experience how digital realities are being used in workplaces, students will work together to automate robots around a navigational challenge.

Taking part in this program, students will collaboratively:

Industry Tech Taster - A (1 hour)

- Use headsets to explore various virtual reality (VR) experiences

Industry Tech Taster - B (1 hour)

- Program / code robots to solve real-world problems

Industry Tech Taster - C (1 hour)

- Use laser cutter to produce a small memento to take home

Career Links

Designers: Civil Engineer, Product Tester, Electrical Engineer

Technologists: Programmer, Software Engineer, ICT Analyst

INDUSTRY FOCUS AREA

Advanced Manufacturing, Food & Fibre, Health

VICTORIAN CURRICULUM LINKS

Digital Technologies, Capabilities

TECHNOLOGY USED

Virtual reality (VR) headsets, Robots, iPads

YEAR LEVEL

7 - 8

DURATION

1 - 3 hours

MAX STUDENT NUMBERS

20

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Physics

What is light? This question has baffled physicists and scientists for hundreds of years. In the 19th century light was described as a wave travelling through a medium. Thomas Young's famous double slit experiment provided strong confirmation of the wave model of light. In 1905 Einstein proposed that light consisted of small quanta of energy, later named photons. These two seemingly incompatible models are still used to describe the various characteristics of light and is often referred to as wave/particle duality.

Program Summary
In this program, students will investigate one of the following:

What is light?
Students will investigate the properties of waves on a string. They will take measurements and create standing waves in a wire, modifying the arrangement to produce various harmonic oscillations. Students will then re-create Young's experiment and determine the width of a single hair by measuring the separation of lines in an interference pattern.

Kinematics
Students will investigate the motion of a cart along an inclined track to gain an understanding of Newton's Laws and the relationship between parameters such as displacement, velocity, and acceleration.

Taking part in this program, students will collaboratively:

Physics - A (1 hour)

- Investigate properties of waves on a string
- Measuring width of human hair by measuring the separation of lines in an interference pattern

Physics - B (1.5 - 2 hours)

- Investigate motion of a cart on an inclined track to gain an understanding of Newton's Laws and the relationship between displacement, velocity, and acceleration

Career Links
Engineers: civil, construction, electrical, mechanical
Scientists: chemists, physicists, biologists, sports, environmental, medical sciences

INDUSTRY FOCUS AREA
All

VICTORIAN CURRICULUM LINKS
Science, Capabilities, Design Tech

TECHNOLOGY USED
Waves on a wire kit, Optics kits, Lasers, Gravity cart and tracks, iPads and associated software

YEAR LEVEL
10 - VCE

DURATION
1 - 3 hours

MAX STUDENT NUMBERS
20

Smart and Safe - empowering business success

In todays fast-paced world, businesses face more pressure than ever to stay safe, boost productivity, and remain economically resilient. Smart businesses are always on the lookout for ways to streamline their operations and strengthen their bottom line without compromising the safety of their employees.

Program Summary
In this program, students will use the Design Thinking process to tackle a health and safety, productivity, or operational challenge from a local Gippsland industry. They will begin by learning about the industry and some of the challenges they face in their everyday work. They will then undertake a variety of masterclasses to build their skills to tackle these challenges. The final part of the day will see students prototyping solutions and pitching their ideas to make the workplace a safer place to be.

Taking part in this program, students will collaboratively:

- Identify an issue present in a Gippsland industry
- Propose, develop, and test a solution to mitigate the identified risk
- Pitch an idea

Career Links
Artisans: Machinery Operator, Farm Worker, Electrician
Designers: Electrical Engineer, Building Inspector, Product Tester
Technologists: Programmer, Software Engineer, Web Designer

INDUSTRY FOCUS AREA
New Energy

VICTORIAN CURRICULUM LINKS
Work Related Skills - Unit 3,
Literacy Skills - Unit 2 & 3

TECHNOLOGY USED
CAD, Robotics, Virtual Electronics, Coding, Makerspace Materials

YEAR LEVEL
VCE / VM

DURATION
1 Day

MAX STUDENT NUMBERS
28

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Sports Science

The impact of advancing technology and innovation is changing how we train and play sport. In this program, students will explore how science and technology are impacting the sports and fitness industries. Through hands-on activities, students will experience new ways to exercise and assess performance and understand the impact of new and developing technologies in sport and exercise. Understanding how cardiovascular and respiratory systems work together to meet the demands of the body during exercise is critical to evaluating fitness and performance, particularly at elite levels of sport.

Program Summary
Students will explore how science and technology are impacting the sports and fitness industries. Through hands-on activities, students will experience new ways to exercise and assess performance and understand the impact of new and developing technology in sport and exercise. This program is designed as an introduction to new technologies relating to sport and exercise, and to increase awareness of careers in sports science.

Students will have access to a range of technologies applied in the sports science industry.

Students will observe the cardiovascular and respiratory systems in virtual and mixed realities to see gas exchange in action and view blood flow around the body.

Taking part in this program, students will collaboratively:

Sports Science - A (1 hour)

- Use sensors to assess speed and jump height
- Participate in activities to assess speed, agility, and decision-making under a range of scenarios

Sports Science - B (1 hour)

- Complete a workout in virtual reality

Sports Science - C (1 hour)

- Investigate the biomechanics of human movement using advanced sensors and interpret data using analysis software

Career Links
Health Professionals, Sports Scientist, Exercise Professional, Data Analysis, Sports Technologist, Physiotherapist, Sports Medical Professional, Exercise Physiologist

INDUSTRY FOCUS AREA
Sports Science, Exercise and Health Sciences

VICTORIAN CURRICULUM LINKS
Science, Physical Education, Capabilities

TECHNOLOGY USED
Jump mats, Speed gates, iPads, Blazepods, Biomechanical analysis software, Heart rate monitors, Virtual and mixed reality

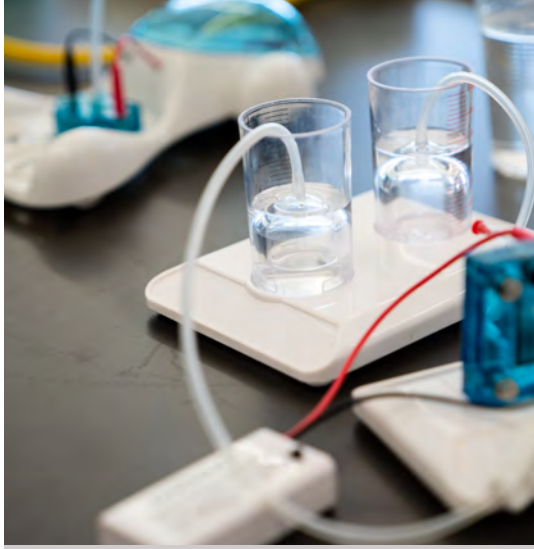
YEAR LEVEL
9 - 10

DURATION
1 - 4 hours

MAX STUDENT NUMBERS
24

Sustainable Futures

Sustainability can be defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. A key part of a sustainable future is building more resource-efficient homes. Using good design principles can save energy, water, and money while creating a more enjoyable and comfortable home. There is also worldwide pressure to reduce CO2 emissions and move towards renewable energy sources. New industries are proposed for the Gippsland region including OSMI wind farms, solar farms, Southerly Ten wind turbines, and the Marinus Link between Tasmania and Victoria.



Program Summary

Students will be introduced to a variety of different types of renewable energy. They will investigate the advantages and disadvantages of solar, wind, and hydrogen energy, and conduct experiments with several energy types. Students will expand upon their knowledge of energy types and energy conversions. Students will look at energy efficient building design and be introduced to principles of heat flow and energy conversion. They will investigate the insulation properties of various building materials and the use of different glazing treatments.

Taking part in this program, students will collaboratively:

Sustainable Futures - A (1 hour)

- Using a specialised kit, students will generate hydrogen from the hydrolysis of water, then pass hydrogen through a fuel cell to power LED lights and a small vehicle.

Sustainable Futures - B (1 hour)

- Experiment with various blade designs and configurations to build a wind turbine that produces the most energy using the fewest resources

Sustainable Futures - C (1 hour)

- Experiment with different glazing treatments and insulation materials using a model house to determine the most suitable materials for various applications

Sustainable Futures - D (1 hour)

- Use infra-red cameras to determine sources of heat loss in buildings, and determine the most suitable roofing and cladding materials

Career Links

Artisans: Machine Operators, Builders, Electricians, Carpenters

Designers: Architects, Product Testers, Interior Designers, Draftsperson

Engineers: Civil, Construction, Electrical

INDUSTRY FOCUS AREA

New Energy, Advanced Manufacturing

VICTORIAN CURRICULUM LINKS

Science, Geography, Maths, Capabilities

TECHNOLOGY USED

Renewable energy kits - wind turbines and solar panels, Hydrogen electrolysis and fuel cells, Infra-red thermal imaging cameras, STELR housing kits, iPads

YEAR LEVEL

7 - 10

DURATION

1 - 4 hours

MAX STUDENT NUMBERS

24

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TEACHER PD OPPORTUNITIES

Teacher Professional Learning

Skill Builders

Sessions available on request.*

- Introduction to Coding
- Introduction to Generative AI
- Introduction to 3D Design and Printing – TinkerCAD
- Intermediate Generative AI
- Tech Tools for the classroom

** Skill sessions on other technology and software available on request.*

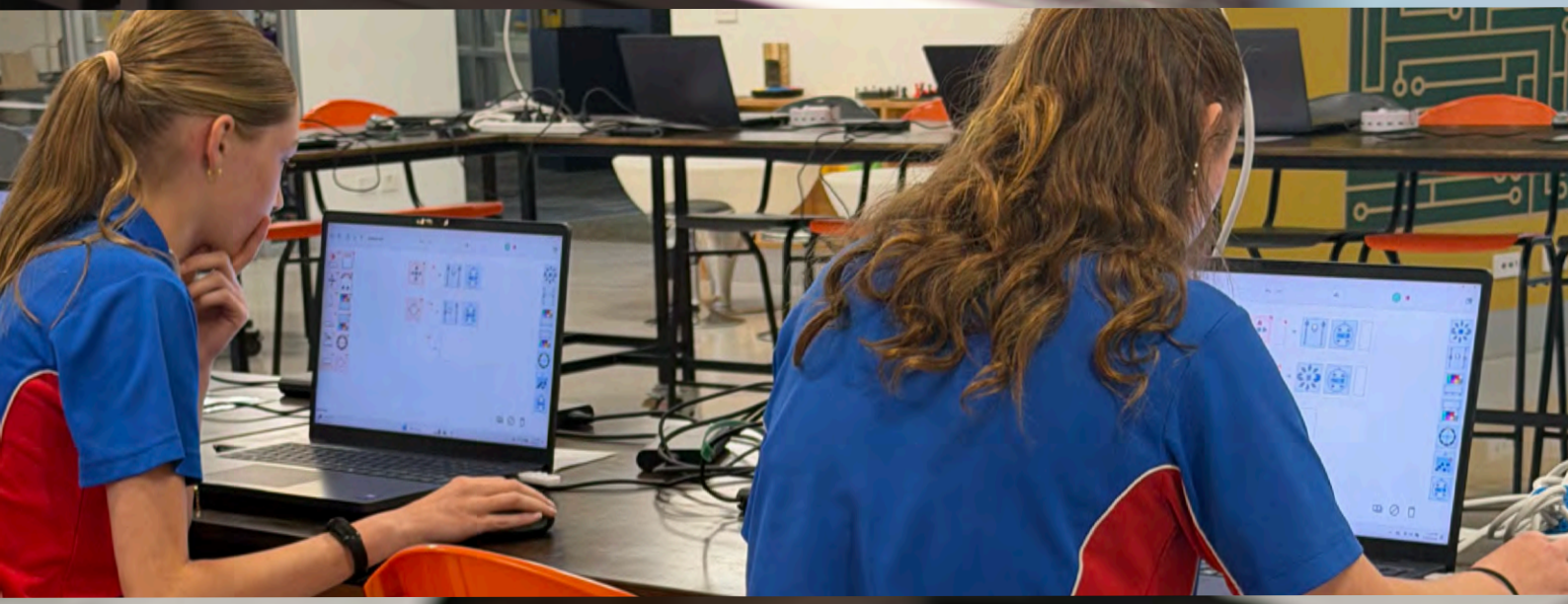
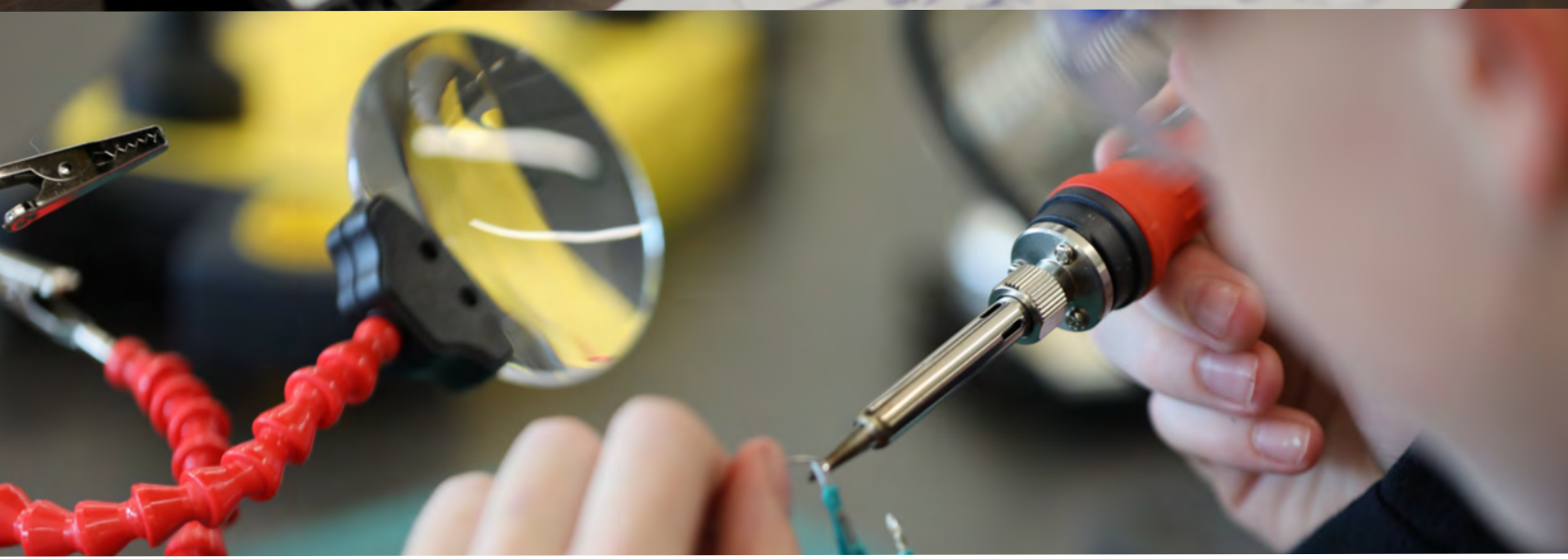
In-school PL

Contact us to design your own PL program to meet the needs of your school.

Teaching with Tech

In program mentoring! Partner school teachers can arrange to either watch, participate or co-facilitate a program delivered by the Gippsland Mobile Tech School tosupport their own teaching skills and tech knowledge.

Contact us to discuss options for you or for your colleagues.

D2I - Design 2 Innovate

Developed by Tech Schools in partnership with the VATL, Victorian teachers and international design thinking experts, **Design2Innovate: introduction to design thinking** will support middle leaders and classroom teachers to become more confident in using design thinking in classroom, school curriculum and leadership practice.