

Transforming Learning – A Mathematical Journey

INTEGRATING TODAY'S TECHNOLOGY INTO TOMORROW'S CLASSROOM

Attention: Head of Mathematics / STEM

Don't miss this exciting end of year event, a full day of workshops for teachers of mathematics years 7 to 12. Come along and stimulate your synapses with a collection of mathematical modelling activities; nourish your neurons on a noetic coding journey or dangle your dendrites into virtual reality. At the conclusion of your journey your brain and your mathematics classes will never be the same.

Date: Friday 28th November

Location: Flinders Christian Community College (Carrum Downs)
100 Ballarto Road, Carrum Downs

Cost: \$50.00

Time: Check in: 8:40am – 9:00am. Sessions: 9:00am – 3:10pm

Catering: Tea/Coffee + Morning Tea + Light Lunch (included)

Content: Year 7 through to VCE Mathematics: General, Methods & Specialist. Full program attached.

Registration: <https://www.trybooking.com/DFBHA>

Warm Up: Try this little puzzle to get your mind into shape.

Just for fun, Jess decided to add up all the house numbers in her street. To Jess's surprise she found that the sum of the numbers to the left of her house is exactly the same as the sum of the house numbers to the right. Given there are more than 10 houses in the street: What is Jess's house number?



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Session 1

Check in: 8:40am to 9:00am

Welcome: 9:00am to 9:15am

Session 1: 9:20am to 10:10am

Death by Decimal [Antje Leigh-Lancaster]

Room 1

Did you know many hospital patients have died through under/over-dose of medication by a factor of 10? In this hands-on session you will have the opportunity to engage with a fresh approach to introducing decimals (10ths, 100ths and 1000ths) using a specially developed number line template in Excel and student printed versions.

One of the challenges when developing understanding of decimal place value is to represent the size of the smaller place values in correct proportion. The benefit of using this template is the visual representation of decimal place values and the relationships between them. This also leads nicely into equivalence and rounding. Handouts and the Excel template will be shared with participants.

Equipment: Laptop Computer (BYO)

Year Levels: 7 – 10

Escape Room – [Peter Fox]

Room 2

Are you ready to unlock student engagement? In this hands-on workshop, mathematics is your key to freedom. You'll experience an immersive problem-solving adventure just like your students would, solving puzzles that require mathematical reasoning, collaboration and creative thinking to escape. Come prepared to solve, create and escape!

Equipment: None required

Year Levels: 7 - 10

Maximising VCE Exam Success with Widgets on TI-Nspire [Sandi Leslie]

Room 3

Discover how Widgets can streamline problem solving, reduce errors and boost student confidence in VCE exams. This hands-on session will showcase practical examples of Widgets, tailored to the VCE curriculum, with a specific focus on General Mathematics. Participants will see how to create, install and use a Widget. Participants will leave with ready to use strategies and resources to empower their students with the full potential of TI-Nspire technology.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE Mathematics

What's the Rate? Chasing change with calculus [David Leigh-Lancaster]

Room 4

This session explores engaging ways to introduce the key ideas of average and instantaneous rates of change and the derivative through practical and visual activities. Participants investigate motion scenarios and explore filling vases of different shapes to see how water height changes. They approximate rates numerically making the transition from average to instantaneous rate. Desmos and GeoGebra are used throughout to animate graphs, trace changing slopes, and connect numerical, algebraic, and graphical perspectives, helping learners build a deeper and more intuitive understanding of the derivative.

Equipment: Laptop Computer (BYO)

Year Levels: VCE Mathematical Methods

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Session 2

Session 2: 10:15am to 11:05am

SNAPI [David & Antje Leigh-Lancaster]

Room 1

Snap is a two-player card game where each player starts with a deck of 52 cards. Players flip cards and try to be the first to call out “snap” when two identical cards appear.

- What is the probability of no matches across the entire 52 cards being played?
- How could a simulation be designed to form an estimate of this probability?

In this session you'll get to play Snap, simulate snap using Excel and explore a series of prompts to build a digital simulation of the game using ChatGPT!

The Excel template, digital simulation and ai prompts will be shared with participants.

Equipment: Laptop Computer (BYO)

Year Levels: 7 - 10

From Gradient to Greatness [Peter Fox]

Room 2

From the humble straight line to the elegance of calculus, this workshop explores the power and versatility of linear functions. Starting with the essentials: gradient and y-intercept, participants will experience a world of linear functions as we build toward envelopes, simultaneous equations, parameters and opportunities to explore calculus. Providing purpose and producing aesthetically interesting patterns can make this repetitive task a lot more memorable and engaging for students. Participants in this workshop can stay in their middle school environment or explore the limits on a journey into Specialist Mathematics, you decide where this journey might lead.

Note: Presentation will use TI-Nspire CX II CAS technology, but content is applicable to a range of graphing platforms.

Equipment: CAS Calculator or Graphing Software

Year Levels: 9 – VCE Mathematics

Maximising VCE Exam Success with UDFs on TI-Nspire [Sandi Leslie]

Room 3

Discover how to create, use and install a User Defined Function to help streamline problem solving, reduce errors and boost student confidence in VCE exams. This hands-on session will showcase practical examples of UDFs, tailored to the VCE curriculum, with a specific focus on General Mathematics. Participants will leave with ready to use strategies and resources to empower their students with the full potential of TI-Nspire technology.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE Mathematics

TI-Nspire and Mathematical Methods Examination 2, 2025 [Raymond Rozen]

Room 4

In this session we will look at the questions from the 2025 VCAA Mathematical Methods Examination 2, in particular the new questions relating to the revised study design. We will explore how the TI-Nspire™ CX II CAS calculator can be used efficiently to perform the corresponding operations and consider how these affordances and constraints can inform future teaching practice. Users of the TI-Nspire™ CX II CAS calculators can benefit and save time in recording solutions and checking answers to many of the multiple choice questions and parts of extended responses questions, using pre-prepared notes pages or use of some not well-known TI-Nspire™ CX II CAS commands.

Equipment: Laptops (BYO) or TI-Nspire™ CX II CAS

Year Levels: VCE Mathematical Methods

Morning Tea: 11:10am to 11:30pm

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Session 3

Session 3: 11:35am to 12:25pm

Ideas to Innovation: Design Thinking in STEM with AI (Powered by Britannica) [Michelle Kueh] Room 1

What happens when the creativity of design thinking meets the power of artificial intelligence? In this session, we'll explore how AI can transform STEM classrooms into hubs of innovation - helping students move from identifying problems to prototyping solutions with speed and imagination.

Using Britannica's inquiry-based STEM resource, we'll demonstrate how design thinking principles - empathy, ideation, prototyping, and testing - can be supercharged with AI tools to enhance inquiry, spark curiosity, and make STEM learning more relevant to real-world challenges.

By the end of this session, educators will leave with a toolkit of approaches for integrating AI and Britannica Science into design thinking frameworks - empowering students to think critically, create boldly, and innovate confidently in an AI-rich future.

Equipment: Laptop Computer (BYO)

Year Levels: All

Experience Mathematics through Virtual Reality [MindFlight7] Room A

Step into the future of learning with Mindflight7's immersive Mathematics Applications. This innovative experience combines the thrill of VR technology with the beauty of mathematics. Attendees will engage with mathematics in ways that foster a deeper understanding, promote exploration, reduce anxiety and cater for individual learning styles. Get ready to change the way you think about mathematics and STEM education.

Equipment: Provided

Year Levels: All

Click, Drag, Discover! Exploring Concepts Dynamically with TI-Nspire. [Frank Moya] Room 3

In this session participants will learn how to use some of the dynamic features of TI-Nspire to help create interactive documents enabling students to visualise key concepts, leading to greater clarity and deeper understanding of mathematics. Participants are encouraged to bring their computer with the TI-Nspire Premium teacher software installed.

Note: If you do not have the software installed, please contact: teacher-support@list.ti.com

Equipment: TI-Nspire Software (preferred) or TI-Nspire™ CX II CAS

Year Levels: VCE Mathematics

TI-Nspire and Specialist Mathematics Examination 2, 2025 [Raymond Rozen] Room 4

In this session we will look at the questions from the 2025 VCAA Specialist Mathematics Examination 2, in particular the new questions relating to the revised study design. We will explore how the TI-Nspire™ CX II CAS calculator can be used efficiently to perform the corresponding operations, and consider how these affordances and constraints can inform future teaching practice. Users of the TI-Nspire™ CX II CAS calculators can benefit and save time in recording solutions and checking answers to many of the multiple-choice questions and parts of extended responses questions, using pre-prepared notes pages or use of some not well-known TI-Nspire™ CX II CAS commands.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE Specialist Mathematics

Power Up Personalised Learning with IXL [Kelvin Finger] Room 5

Discover how IXL empowers secondary mathematics teachers to personalise learning, build core skills, and assess student progress with ease. In this hands-on session, you'll explore IXL's powerful analytics, differentiated practice, and real-time diagnostics—all designed to save teachers time while boosting student growth across the curriculum. Come ready to flex your mathematical muscles, put your skills to the test, and compete for some great prizes!

Equipment: Laptop Computer (BYO)

Year Levels: 7 – 12

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Session 4

Session 4: 12:30pm to 1:20pm

Experience Mathematics through Virtual Reality [MindFlight7]

Room A

Step into the future of learning with Mindflight7's immersive Mathematics Applications. This innovative experience combines the thrill of VR technology with the beauty of mathematics. Attendees will engage with mathematics in ways that foster a deeper understanding, promote exploration, reduce anxiety and cater for individual learning styles. Get ready to change the way you think about mathematics and STEM education.

Equipment: Provided

Year Levels: All

Shift Happens! – Focusing on Parabolas [Peter Fox]

Room 2

There is so much more to this wonderful curve than factorising and expanding the algebraic representation. Paper folding, transformations, applications and modelling are just some of the elements that will be touched on in this workshop. Transformations: Learn techniques that will help circumvent the sorts of errors that lead to 95% of students getting exam questions wrong. Applications: From bouncing a ball to shooting hoops. Modelling: From the world's biggest parabola (500m diameter) to Skyscrapers that melt cars. There is something here for everyone to focus on. Participants will leave with an entire book of activities!

Note: Presentation will use TI-Nspire CX II CAS technology, but content is applicable to a range of graphing platforms.

Equipment: CAS Calculator or Graphing Software

Year Levels: 9 – VCE Mathematics

Recursion and Financial Modelling [Frank Moya]

Room 3

Recursion and financial modelling - beyond Finance Solver. In this workshop we will explore other features of TI-Nspire that are often under-utilised but useful for this topic, including, but not limited to, recursion in the Calculator and Spreadsheet Applications.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE General Mathematics

Surprising Occurrences of e and Programming using TI-Nspire [Raymond Rozen]

Room 4

Description: The sequence 0,1,2,9,44,265 ... captures a captivating pattern that intertwines concepts from several classical mathematical problems and is one of the many surprising occurrences of e that will be presented in this session. The sequence serves as a rich context for engaging with pseudocode and programming. In this session attendees will explore this interesting sequence and other simulations and learn how to write a TI-Nspire function and a program to generate this and related simulations. Attendees are encouraged to bring a TI-Nspire™ CX II CAS calculator or a laptop with TI-Nspire CAS software.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE Mathematical Methods & Specialist Mathematics

Lunch: 1:20pm to 2:00pm

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Session 5

Session 5: 2:00pm to 2:50pm

Spaced Practice: Boosting Retention Through Strategic Questioning [Craig Blake]

Room 1

This practical session explores how strategic questioning, and spaced retrieval can help students retain key concepts and build fluency over time. We'll unpack a three-tiered approach to practice — from scaffolded first exposure to gamified review — and look at how it can support differentiation in mixed-ability classrooms. You'll leave with classroom-ready strategies and tools to help students move knowledge from short-term to long-term memory, without sacrificing engagement.

Equipment: Laptop Computer (BYO)

Year Levels: All

Fun with Flags & AFL footy jumpers [Raymond Rozen]

Room 2

The latest version of TI-Nspire has intrinsic functions to draw and fill shapes. In this hands-on session we will use TI-Nspire™ CX II CAS to write programs to draw and colour some of the AFL footy team's jumpers and or flags of the world. Come along to this colourful activity and use coordinate geometry and learn STEM concepts and programming skills. Attendees are encouraged to bring a TI-Nspire™ CX II CAS calculator or a laptop with TI-Nspire CAS software.

Equipment: TI-Nspire™ CX II CAS

Year Levels: 9 – VCE Mathematics

TI-Nspire™ CX II CAS and General Mathematics Examinations 2025 [Sandi Leslie]

Room 3

In this session we will look at the questions from the 2025 VCAA General Mathematics Examinations, in particular questions relating to the revised study design. We will explore how the TI-Nspire™ CX II CAS calculator can be used efficiently to perform the corresponding operations and consider how these affordances and constraints can inform future teaching practice. Users of the TI-Nspire™ CX II CAS calculators can benefit and save time in recording solutions and checking answers to many of the multiple-choice questions and parts of extended responses questions, using pre-prepared notes pages, widgets or use of some of the lesser-known TI-Nspire™ CX II CAS commands.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE General Mathematics

Simulations that Build Confidence and Understanding [Frank Moya]

Room 4

In this we will build dynamic simulations on TI-Nspire that bring sampling and probability to life while deepening student understanding of variability and inference, including an information treatment of the central limit theorem. Sampling will be drawn from symmetrical and asymmetrical distributions; these are important concepts for students to grasp. Other examples will include simulation of confidence intervals to visually illustrate that most, not all, confidence intervals contain the true population mean.

Equipment: TI-Nspire™ CX II CAS

Year Levels: VCE Specialist Mathematics

Ideas Hub

Room A

Conferences are wonderful, you come away with lots of great ideas but no time to synthesis or plan for implementation. The Ideas Hub is an 'un-conference' space, an opportunity to talk to your colleagues, new friends or industry partners about some of the things you have experienced so far.

Equipment: NA

Year Levels: All

Closing: 2:50pm to 3:10pm

Prize draws, Feedback + Networking

Room A

\$1000's in prizes to be won, thanks to our industry partners. Don't miss this amazing opportunity to get your hands on some free stuff! Spend time networking and connecting with other teachers with a view to reducing your workload and stress as we head towards 2026!