

# CURRICULUM, PEDAGOGY AND BEYOND



THE MATHEMATICAL  
ASSOCIATION OF VICTORIA

**MAV24**  
CONFERENCE



# Building Thinking Classrooms in a Senior Class



## Event App



### App Download Instructions

Step 1: Download the App 'Arinex One' from the App Store or Google Play



App Store



Google Play

Step 2: Enter Event Code: **mav**

Step 3: Enter the email you registered with

Step 4: Enter the Passcode you receive via email and click 'Verify'. Please be sure to check your Junk Mail for the email, or see the Registration Desk if you require further assistance.



# Be in it to WIN!



## A02 - (Year 1 to Year 6) Supporting High Potential and Gifted Learners in Mathematics

Pedagogy

☆ Add to Favourite >

✍ Complete the Survey >

i Description >

Speaker



**Dr Chrissy Monteleone**  
ACU

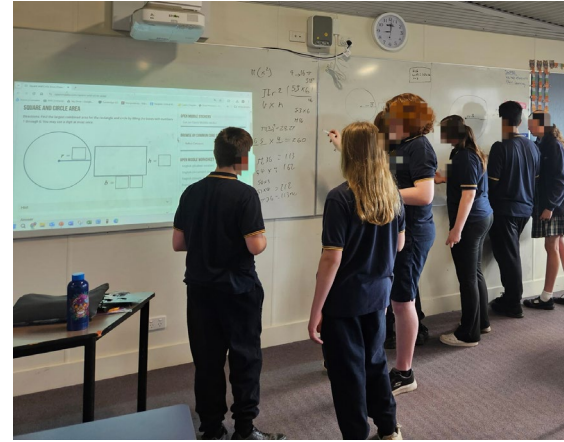


# Session Overview

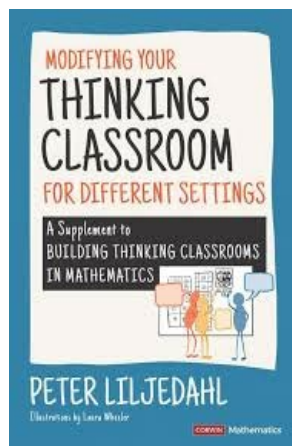
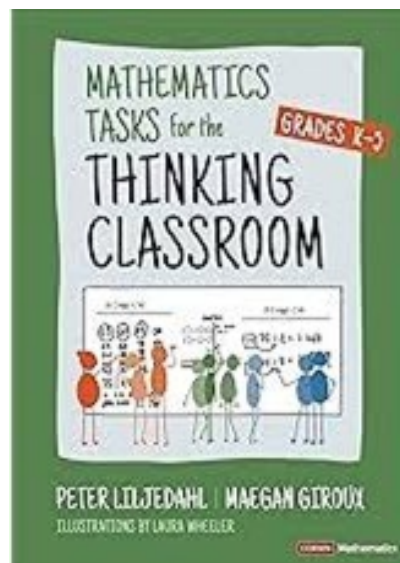
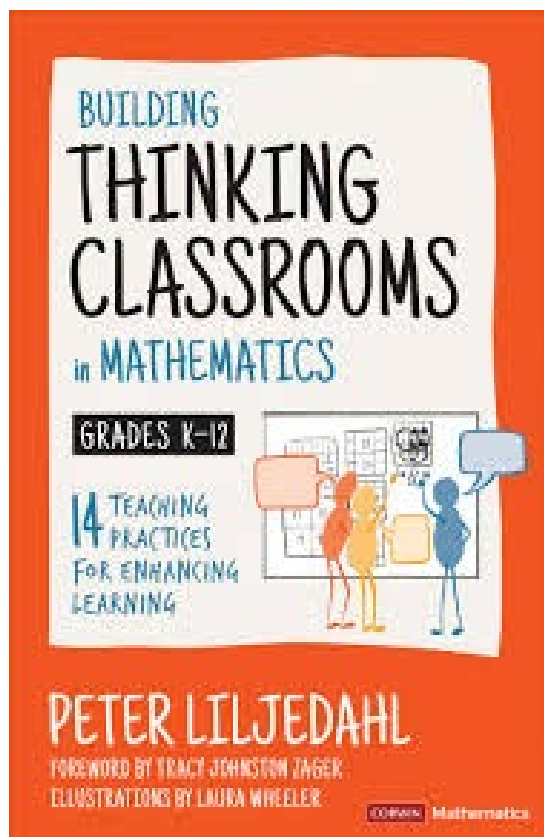
- ❑ Background
- ❑ BTC Overview
- ❑ Strategies for collaboration and thinking
- ❑ Try a task
- ❑ Thin Slicing
- ❑ The effects of BTC



# Background - A little about me and my students



# BTC Overview



1. What types of tasks we use
2. How we form collaborative groups
3. Where students work
4. How we arrange the furniture
5. How we answer questions
6. When, where, and how tasks are given
7. What Homework looks like
8. How we foster student autonomy
9. How we use hints & extensions
10. How we consolidate a lesson
11. How students take notes
12. How we choose to evaluate
13. How we use formative assessment
14. How we grade

# Strategies for collaboration and thinking

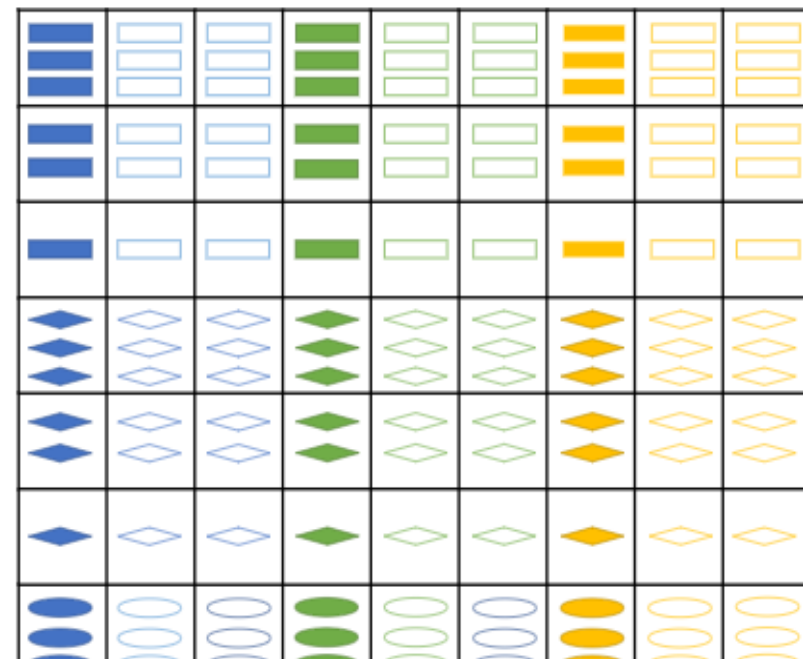
Visibly random groups

Build a collaboration rubric

Non Curricular Tasks

Only answer 'keep thinking questions'

Value thinking over answer getting



Silence, ignoring, no communication	←	→	Communication (3 voices)
Negative criticism	←	→	Constructive feedback, criticism
Lone wolf (pen hog)	←	→	Sharing pen, work, ideas
Letting the rest of the group do all the work	←	→	Actively participating and trying
Sitting/ disengaged	←	→	Standing/ engaged
Removing work without permission	←	→	Valuing <u>each others</u> work



# Session Overview

- ☒ Background
- ☒ BTC Overview
- ☒ Strategies for collaboration and thinking
- ☐ Try a task
- ☐ Thin Slicing
- ☐ The effects of BTC



# Task

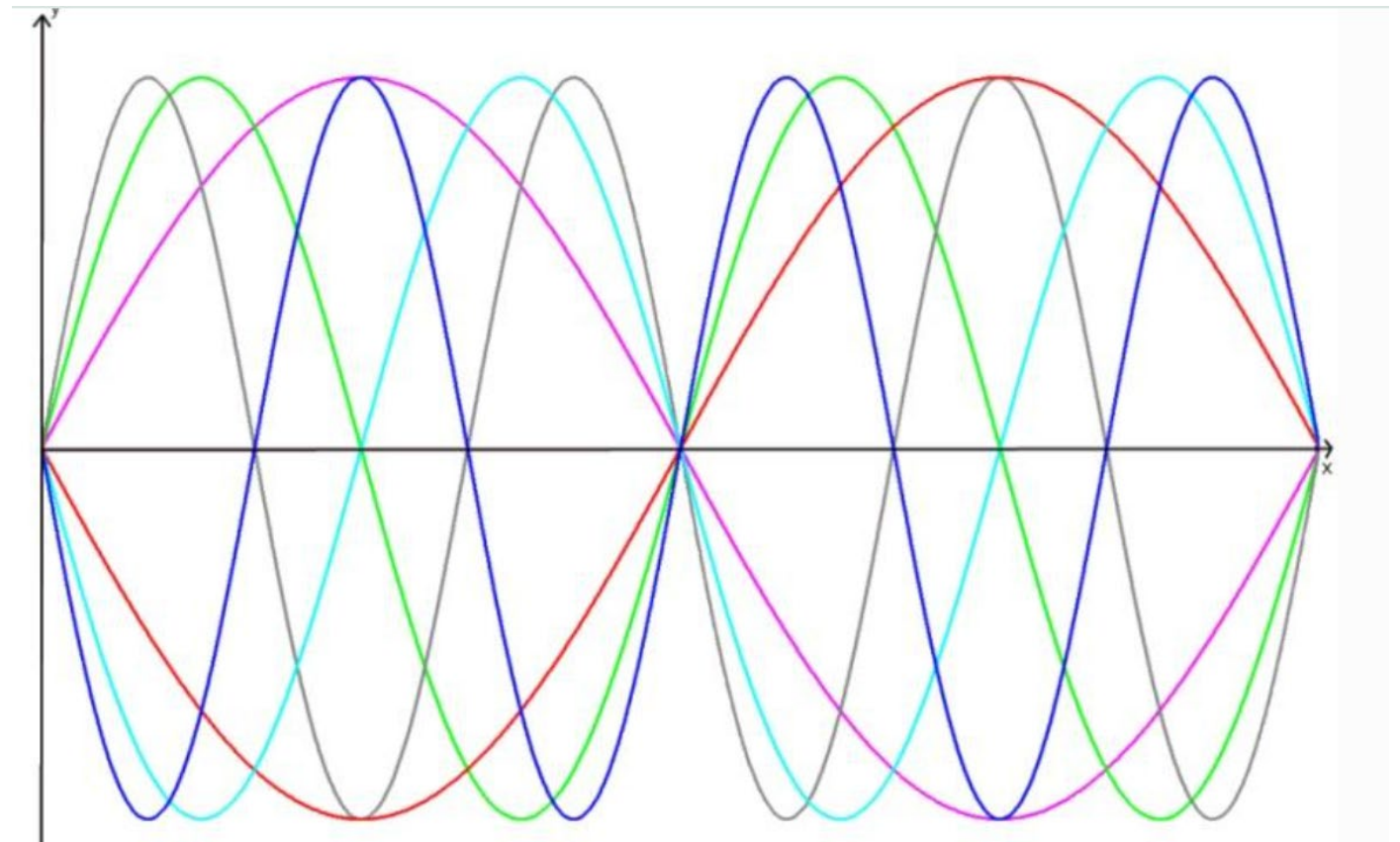
## Random groups

Study your 'network' and write a detailed description that can be used by another group to draw your network



# Other tasks I like

<https://nrich.maths.org/problems/tangled-trig-graphs>





# Other tasks I like

Adding together a series of numbers

Starts with story about Gauss adding 1 to 100

<https://www.nctm.org/Publications/TCM-blog/Blog/The-Story-of-Gauss/>

Building to adding from any starting value with a common increase (see handout)





# Thin Slicing

Most common question types

Change one thing at a time

Really need to understand progression

Have a low enough access point so students can experience success

You try

a)  $(x - 4)(x + 3) = 0$

b)  $(2x + 3)(3x - 1) = 0$

c)  $x(x + 8) = 0$

d)  $x^2 = 144$

e)  $x^2 = 53$

f)  $x^2 - 25 = 0$

g)  $5(x^2 - 1) = 15$

h)  $x^2 - 2x = 0$

i)  $6x^2 - 18x = 0$

j)  $x^2 + 3x - 10 = 0$

k)  $x^2 + 5x - 36 = 0$

l)  $x^2 + 4x = 12$

m)  $x^2 + 4x = 21$

n)  $3x^2 + 4x - 7 = 0$

o)  $4x^2 + 11x + 6 = 0$

p)  $x(6x + 5) = 6$

# BTC in action

More engagement

More knowledge mobility

Improved results

Better communicators





# Questions??



# RESOURCES



## App Download Instructions

## Event App

Step 1: Download the App 'Arinex One' from the App Store or Google Play



App Store



Google Play

Step 2: Enter Event Code: **mav**

Step 3: Enter the email you registered with

Step 4: Enter the Passcode you receive via email and click 'Verify'. Please be sure to check your Junk Mail for the email, or see the Registration Desk if you require further assistance.



# Be in it to WIN!



## A02 - (Year 1 to Year 6) Supporting High Potential and Gifted Learners in Mathematics

Pedagogy

☆ Add to Favourite >

✎ Complete the Survey >

i Description >

Speaker



**Dr Chrissy Monteleone**  
ACU