

# MATHEMATICAL REVOLUTIONARIES' PD SERIES

Session	Workshop title (and focus)	Date / Time
1	Mathematical Entrées (Lesson starters, reasoning, metacognition)	Thursday, 17 <sup>th</sup> Feb (3:30-5:00pm)
2	The Power of puzzles (Collaboration, application/transfer of learning)	Thursday, 17 <sup>th</sup> Mar (3:30-5:00pm)
3	Vertical surfaces & building thinking classrooms (Collaboration, rich tasks, metacognition)	Thursday 5 <sup>th</sup> May (3:30-5:00pm)
4	I hope you fail! (Growth mindset, productive dispositions)	Thursday, 26 <sup>th</sup> May (3:30-5:00pm)
5	Weapons of math instruction (Developing numbers skills with card games)	Thursday, 21 <sup>st</sup> Jul (3:30-5:00pm)
6	Mind your language (Mathematical vocabulary)	Thursday, 25 <sup>th</sup> Aug (3:30-5:00pm)
7	Teamwork makes the dream work (Collaboration, Personal + social capabilities)	Thursday, 29 <sup>th</sup> Sep (3:30-5:00pm)
8	I've got problems...and some are interesting! (Sharing ideas, struggles and success stories)	Thursday, 20 <sup>th</sup> Oct (3:30-5:00pm)

This practical, hands-on professional learning series is for revolutionary teachers who are dedicated to improving their craft.

In these sessions we'll be exploring how Maths Mate textbooks can support you in reimagining the maths classroom. Whether you're using these textbooks or not, these playful workshops are designed to help you:

- Deliver content in creative and engaging ways
- Enjoy and pass on an enjoyment of maths
- Build vibrant thinking classrooms full of mathematical reasoning
- Share ideas and connect with other passionate problem solvers
- Develop a growth mindset in your learners

8 engaging webinars throughout 2022. 90-minute workshops, with an additional 30-minutes for informal discussion, building connections, asking questions and enjoying problems.

Participants will be given resources, webinar recording(s) and a PD certificate to recognise your professional learning hours.

Would you like your learners to describe maths with these words?

If so, this PD series is for you.



# DETAILED OVERVIEW OF EACH SESSION

## MATHEMATICAL ENTREES

We've probably all been to one of those fancy events where they bring out little canapés to snack on while you wait for the main course. For some of us these entrées become the main course as we follow our favourite hors d'oeuvre around the room claiming, "They're for a friend", to the waiter who looks at you suspiciously!

Mathematical entrées are designed to whet your learner's appetite and get them excited for what's to come, generate rich mathematical reasoning or even become the main lesson when you see how engaged your learners are.

In this session we will playfully explore a range of mathematical entrées and learn to design our own.

## THE POWER OF PUZZLES

A well-designed mathematical puzzle will encourage hours of skill practice while at the same time develop the capacity for critical and creative thinking. Puzzles can engage learners of any ability, as evidenced by the countless number of students I've witnessed give up their own lunchtimes attempting to solve them.

This session will equip you to design your own puzzles and activities by discussing key principles for creating rich, engaging activities. During this workshop participants will produce their very own mathematical puzzle.

## **WEAPONS OF MATH INSTRUCTION**

With just a deck of cards, you can rapidly improve your learners' understanding of addition, multiplication, proportional reasoning, negative numbers, powers, division, mathematical vocabulary and more!

Number skills are only worthwhile when they are used to solve problems. The activities in this workshop will use logic, reasoning and creative thinking to bring number skills to life and provide meaningful opportunities to work like a mathematician.

## **I HOPE YOU FAIL!**

What stops so many learners (both teachers and students) approaching life with a growth mindset is a fear of failure. We've become so obsessed with avoiding failure that we award 8<sup>th</sup> place ribbons, promote students through year levels without any mastery of the content, and, if it's all too difficult, we can avoid hard work and persistence altogether with the infinite possibilities for entertainment at our fingertips.

The maths classroom is the perfect environment to teach our learners to take thoughtful risks, tackle challenging problems and fail well. In this session we will explore difficult problems and discuss the art of guiding learners (instead of giving answers) so they can own and celebrate their success.

## **VERTICAL SURFACES AND THINKING CLASSROOMS**

According to (Liljedahl 2020) during a typical maths lesson the vast majority of students spend their time slacking, stalling, faking, and/or mimicking instead of thinking!

Working on vertical erasable surfaces in random groups isn't going to magically change this unless students are given highly-engaging non-curricular activities.

During this session we'll explore interesting problems on a shared workspace and discuss how collaborating on a shared non-permanent space helps students collaborate, take risks and take responsibility for their own thinking.

## **MIND YOUR LANGUAGE**

Getting lost overseas isn't much fun, especially when you can't read the signs or speak the language! For a lot of students, solving maths problems feels much the same.

The good news is, we can do something about it.

In this session, you'll be shown a range of hands-on activities to provide a meaningful context for the use and repetition of mathematical terms. Learning by immersion is the fastest, most natural way to understand language, so let's make use of it by immersing our students in the world of mathematics.

## **I'VE GOT PROBLEMS...AND SOME ARE INTERESTING**

Being part of a mathematical revolution is bound to throw out unexpected challenges.

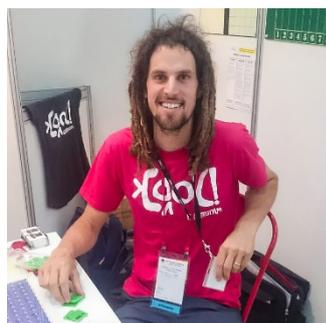
You can bring all your problems to this session as we share ideas, struggles and success stories. Each participant will also bring an interesting maths problem to explain and add to a shared document.

## **TEAMWORK MAKES THE DREAM WORK**

The way we work has changed forever. Today more than ever we can collaborate with people on the other side of the world to write music, build websites, design tee-shirts and advocate for change.

Developing 'soft skills' like (teamwork, communication etc) in conjunction with mathematical knowledge means we don't end up like our brilliant university professor that nobody understood.

This playful session will demonstrate how hands on games have the capacity to build mathematical skills and confidence and develop almost every 'personal and social capability' in the curriculum.



### **MEET YOUR HOST – Andrew Lorimer-Derham from Think Square**

Andrew helps people enjoy maths by creating unique activities and experiences that provide a meaningful challenge for every learner (teachers included). He runs workshops to show how 'Intentional Fun' can completely transform the maths classroom.

Andrew will inspire you to see possibilities, be creative, and think outside the box as you shape the next generation of mathematicians.