

- My favourite maths books – Brenda Kettle
- Ipad Apps for kids
- Great warm-up activities – Trina Patton
- My favourite maths teaching moment – Tierney Kennedy
- Five awesome partitioning activities

Regular Insights, Tips and Pointers for Australian Maths Teachers

Our Favourite things

Awesome books, apps, games and lessons recommended by teachers around Australia

As teachers we are great collectors and sharers – both of resources and ideas. In this issue we wanted to share with you some of our favourites - the ideas, books, lessons, games and technology that have changed the way we teach. As you read this issue, please remember to share it with your friends and colleagues too. We are eager to hear your recommendations via our [Maths Matters Facebook page](#) or through [email](#). We hope you love these ideas as much as we do!



Grade two kids learning about patterns in place-value, as shown in [Teaching Back-to-Front with Tierney](#) DVD set.

My favourite ever maths teaching moment wasn't in a maths class >>>

*What is your favourite maths teaching moment? One where you **know** that you made a life-changing difference?*

Rick's Story

My all-time favourite maths teaching moment was with a boy named "Rick", and wasn't actually in a maths class at all, but in a year 8 science lesson. It was in fourth term and we needed to find the average of the results from an experiment...

I started off by assuming that the kids would not have remembered that we had previously covered mean, median and mode in term 1 of maths... "So guys, what do we know about averages?"

I still vividly remember Rick stopping me in the middle of my lesson and saying, "Mrs Kennedy, we already know about averages." Surprised that he had remembered, I replied, "Oh do you?"

Rick looked at me like I was an absolute idiot, replying, "Don't you remember? You taught it to us!"

He then proceeded to get up in front of the entire class and teach us how to calculate the mean.

Now this might not sound very extraordinary, but Rick was a support student who had never previously passed maths...

Rick had come into my year 8 support maths class at the beginning of the year. He was probably at about year 3 standard. He could add some numbers, and had the beginnings of place value, but he couldn't remember his times tables and fractions were pretty much a write-off.

The Principal had actually warned me about the class saying, "Do whatever you want with them because they are never going to pass standard maths anyway".

I was horrified by his pessimism but decided on the spot that I was going to take him at his word and teach them however I wanted to. I was going to try to see if I could get the kids to really *think* and see what happened.

At the end of a year about 80% of that class actually passed year 8 maths – fractions, negative numbers, algebra, trigonometry – the whole lot... But that wasn't nearly as exciting to me as Rick in that science lesson...

More than six months after I had taught him about mean, median and mode he not only remembered what I had previously taught him, but he applied it to an entirely new context!

He wasn't just regurgitating an algorithm. He now had a lasting understanding of what he had learned.

Imagine what would happen if we could create light-bulb moments for our kids every week? If we could actually know that our kids really got it – and I don't mean just remembered it for the test, but it actually stuck?

It is actually possible. We can create this kind of "forever-learning" for kids.

Simple changes to standard teaching practice can make huge differences to how well our students learn. Experiences with students like Rick helped me to realise the importance of using what I already knew about teaching in a revolutionary way. It has been my pleasure to help thousands of other teachers do the same with the "Rick" in their own classes.

Interested? [click here](#) to get started.

By Tierney Kennedy

We want to hear your stories too!

Why not share your own favourite teaching moment with fellow teachers on our [Facebook group, Maths Matters?](#) We'd love to hear your stories and share ideas together.

*What are your favourite ways to teach>>>
Coordinate Geometry*

Thanks to our Maths Matters members for your suggestions!

Kim: Car play mats with local street names and coordinates down the sides. Give the kids a voice changer mike and let them be Tom Toms " turn left into C4 and travel 5 spaces to C9. " etc.

Bronwyn: Using a Bee bot on a floor map amazing race style. [See Youtube video.](#)

Christina: Playing battle ships

Megan: Pirate treasure maps.

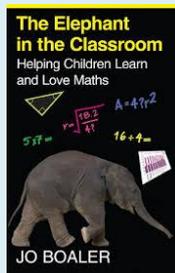
My Favourite Maths Books >>> by Brenda Kettle

For free Teaching Tips, check out www.backtofrontmaths.com.au/teachers/daily-teaching-help/

'The Elephant in the Classroom: Helping Children Learn and Love Mathematics'

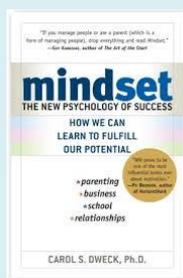
by Jo Boaler

Jo draws research-based connections between effective teaching and helping children to reason and problem solve. This book is a very light read which offers positive solutions and practical activities to encourage students to develop a love of maths.



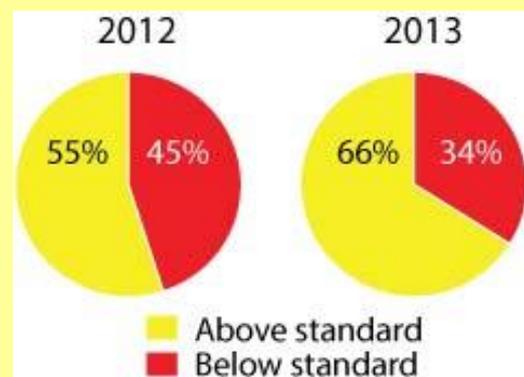
'Mindset' by Carol Dweck

The book presents research on intelligence and mindsets and explains why success is not just a factor of ability or talent but is heavily influenced by whether we have a fixed or a growth mindset. Practical ideas are provided on how to assist students to develop a growth mindset that will create resilience and a love of learning.



Congratulations!

This month our congratulations go to Elissa and the staff at **Highlands Christian Grammar in PNG** for their amazing **PAT Maths growth** after using Back to Front Maths for only six months. Nicely done!



Remember to share your stories too.

Our favourite apps for iPads >>>

iPads and their cousins are definitely the flavour of the month, but how do you know what is actually good and what is just a time-filler?

>>> Here are a few of our favourite apps – and they won't cost you a cent!

Chicken Coup Fractions:

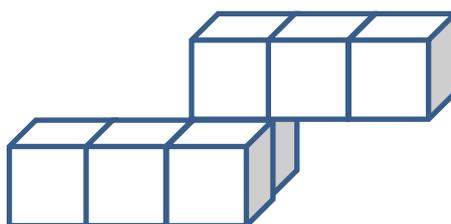
Kids move a nest along a line between 0 and 1 to catch an egg that is being launched. To work out where the egg is going to land they need to estimate the answer to a fractions question.

The questions range from basic to very challenging, and are great for helping kids develop the concept of relative size.

Stumbling Blocks:

Kids are shown two different 3D shapes made of cubes at a time and asked to decide whether they have the same amount of cubes, or whether one is larger.

This is a fantastic way to build visualisation skills, and could be supplemented by actually building the shapes using multilinks cubes.



Graphbook:

This allows kids to manipulate a set range of shapes and objects, including functions. They can see how the curves change given set parameters, even looking at a table of values.

Tens Frames Lite:

Work out what other numbers add to five or ten with counters in tens frames. These show non-standard looking numbers and are great for partitioning.

>>> Want more?

Tabitha Jos from Kingston State School has produced a fabulous list of useful iPad apps for kids and parents that you can [download from here](#).

A word to HOCs

My favourite partitioning activities for rotation groups in F-2 classrooms



Tierney Kennedy -
Education Consultant,
Author and Editor

Partitioning is often talked about in relation to large numbers and place value, however I believe that it is vitally important for early years as well.

Partitioning basically means being able to break a number into parts and then put it back together again. Being able to do this is a precursor for both addition and subtraction, which makes it a wise idea for F-2 teachers to include some partitioning activities for the kids every week. Here are my favourite ones.

Game 1: Take-four numbers

Aim: use the tiles provided below to make numbers between 1 and 10

How the game is played:

Each player may only start with one of each tile from 1-4, which are hidden from view by the other players. One player turns over a card with one of the numbers between one and ten on it. Each player in the group tries to make that number using their tiles. After an agreed upon time, each player must reveal what they have made.

The player who correctly made the total the fastest scores two points, and each player who successfully makes the total scores one point. The winner is the first player to 10 points. You will need the number cards from Ace-10 from a deck of cards.

Game 2: Skittles with a twist

How the game is played:

Give the students 6 or 10 skittles to set up in a triangular pattern. Players take turns to bowl down the skittles. Points are scored not for the number of pins knocked down, but for correctly identifying how many pins were knocked down by looking at those left standing (and vice versa).

Game 3: High sixes and sevens

How the game is played:

One player is identified as the "Caller". The Caller yells out a number between 5 and 10. All of the players have to make the number as quickly as possible with their fingers, but each must have at least one finger on each hand. Players who have made the number in the same way score one point, but players who have a unique (and correct) solution score two points. Additional points can be scored if the players can come up with 3 ways to make a number.



In The Next Issue >>>

Making a strong start to the year

What can we do in terms of planning, resourcing and preparing to make the best possible start for the new year?

Game 4: Missing parts

Aim: To guess/work out how many counters are hidden under a cup without looking.

How the game is played:

Players pair up. Each pair is given a certain number of counters (e.g. 7). One player in the pair closes their eyes, while the second player uses a cup to cover three or more of the counters. The first player opens their eyes and needs to work out how many counters are covered. If the task is completed in less than 10 seconds, the player scores 5 points. 10-20 seconds scores 3 points. Any correct answers that take over 20 seconds score 1 point. Players keep a running tally of their scores.

Tierney

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Facebook Group!

Maths Matters is a Facebook group designed especially for teachers. We have discussion boards which offer tips as well as space to ask real questions from real teachers. Search for *Maths Matters* and choose "like" join us.

Would you like to know more? To subscribe to this FREE newsletter and receive practical tips, techniques and discussion of developments in the field, email manager@kennedypress.com.au with "SUBSCRIBE NEWSLETTER" in the subject.

Alternatively, visit www.backtofrontmaths.com.au/teachers

Feedback and questions are always welcome: Contact Education Consultant Tierney Kennedy at tierney@kennedypress.com.au

Order now, pay in 2014!

Teaching Back to Front with Tierney

Professional Development DVD Set



Light-bulb moments don't just happen – teachers *create* them!

In this eight-part series, Tierney Kennedy shows teachers how to use problem-based teaching to diagnose and confront student misconceptions, lead the students to develop deep understanding and generalise mathematical principles to different areas.

Eight lessons show problem-based teaching in action:

- Foundation: What changes a number and what doesn't (Number Conservation and Partitioning)
- Grade One: Relative size of numbers to ten
- Grade Two: Relationship between tens and ones
- Grade Three: Relative size of numbers to 1000
- Grade Four: Is one half really one half? (Proportional Reasoning with halves and quarters)
- Grade Five: Relative size of decimal numbers
- Grade Six: Double digit multiplicative thinking
- Grade Seven: Adding fractions with unrelated denominators (Proportional reasoning with thirds, fifths and improper fractions)

[Read more online by clicking here](#)



Approximately 3 hours of demonstrations and explanations for \$200!

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