

CURRICULUM, PEDAGOGY AND BEYOND



THE MATHEMATICAL
ASSOCIATION OF VICTORIA

MAV24
CONFERENCE

Engaging Intervention

Amy Somers

Amy.somers@education.vic.gov.au

Acknowledgement of Country

We acknowledge the Wurundjeri people of the Kulin Nation, as the traditional custodians of the lands on which we meet today.

We pay respect to Elders past and present, and to all First Nations people recognising them as the original and ongoing custodians of this land, which was never ceded.

We respect our First Nations peoples as the first teachers of mathematics who continue to teach us by connecting with, respecting and caring for people and country.





Engaging Intervention

In this session we will share what we have been doing at Westall Primary School to create a safe, engaging and rich experience for our students in Tier 2 intervention. Students love coming to these sessions, ask to come along to extra sessions and even ask to stay in during their breaks to finish off their work. In this session we will look at the steps we took to create this culture and will share resources that you could use in your own school setting.

What would you like to get out of today's session?



Warm Up Activity

Draw a picture or write a metaphor about how maths makes you feel.



Intervention programs

- Does your school currently have an intervention program?
- What are the benefits and limitations of this program?



Extending Mathematical Understanding (EMU) – Early Years (Prep to Year 2) or (3-6)

- Research based
- To train a teacher costs \$2950 and is 6 full days
- Lots of resources used

<https://www.monash.edu/education/professional-continuing-education/numeracy/emu-teacher-course-prep-year2>

Bond Blocks

- Research based
- Recorded training sessions
- Recordings of activities
- For the early years



<https://bondblocks.com/>

BB-Exploratory Play and Guided Play

1

Exploratory Play

Bond®
Blocks

Counting to 10 & 20

Introductory Play

Opening the Box

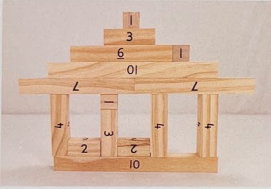
Each student needs one set of blocks. Teach students how to open a box of Bond Blocks. Before opening the clips, the box must be on a **flat surface**, with the **label facing up**. Otherwise, the blocks will spill out onto the floor.

Build

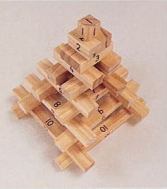
Set expectations for appropriate use of the blocks. Instruct the students to build with their set of blocks. They can use some or all of their blocks.

Talk


After building, ask students to describe their build to the teacher or another student. The teacher can draw attention to length relationships, shapes, positional language and patterns. For example,



"Tell me about what you have made."



"Your pyramid looks very stable. What do you think it is that is making it so strong?"




"These look like steps. Can you make your dinosaur climb up to the top?"

Pack Away

Teach students how to pack away a set of Bond Blocks:

- Put all of the Bond Blocks away. Use the template inside the box to make sure **no blocks are lost**. Packing away the blocks helps students develop consideration for their environment and other students who will use the blocks after them.
- When students are ready to learn about the correct **orientation of numbers**, they should use the template to make sure blocks are not returned with the numbers upside down.
- After the blocks are packed away, but before the lid is shut, students can practise **counting**. Students can count forwards from one or backwards from ten. Instruct students to touch the Bond Block, next to the **written numeral** as they say the **number name**.
- Ensure that students **click shut both clips**, listening for two clicks, before they pick up the box of blocks by the handle. Otherwise, the blocks will spill out onto the floor.
- Show students where the box of blocks live in the classroom and how to return it with the **sticker face up** and the **handle out**. This makes it easier for the next person to use the blocks.



The template inside the box includes numbers and lines to help students place the blocks away in the correct places.

© N. Rice & P. Swan

Bond Blocks Counting to 10 & 20 Exploratory Play

1

Guided Play Filling


Bond®
Blocks

Counting to 10 & 20

Hill

Take out the blocks listed below. Use them to fill the activity card.

1, 1, 2, 2, 3, 3, 4, 4, 5, 5





What did we do at WPS?



How were students selected?

- All funded students and students who are two or more years behind are seen for Literacy and Mathematics intervention.

How will we select students in 2025?

	Literacy Intervention	Numeracy Intervention
<u>Term 1</u> (starting week 2) (swimming week 9 and 10)	Gr 1/2 red zone students (including funded students)	Gr 3/4 and Gr 5/6 red zone students (including funded students)
<u>Term 2</u>	Gr 3/4 and Gr 5/6 red zone students(including funded students)	Gr Preps and 1/2 red zone students (including funded students)
<u>Term 3</u>	Gr Preps red zone students(including funded students)	3/4 and 5/6 red zone and funded students
<u>Term 4</u>	3/4 and 5/6 red zone and funded students	Gr Prep, 1/2 red zone kid and funded students

What assessment did you use?

- We originally used a mix of the Assessment for Common Misunderstandings and the Maths Online Interview.
- We then moved on to using Dr Ange Rogers Pre PVAT test and her fluency screeners and the Bond Blocks screeners.

7	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		1	2	3	4	5
count	count	make/re	make/re	make/re	make/re	make/re	com/orc	com/orc	com/orc	calculat	calculat	calculat	calculat	calculat	calculat	rename	rename	rename	rename		name/re	name/re	name/re	name/re	name/re
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2	2	2	2	2
2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	0	2	0	0	0		2	2	2	2	2
0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0		2	2	2	2	0
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2	2	2	0	2
0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0		2	2	2	2	2
0	0	2	2	2	2	0	2	2	2	0	0	0	0	0	0	0	0	0	0		2	2	2	2	2
0	0	2	2	2	2	2	2	2	2	1	1	0	0	1	0	0	0	0	2		2	2	2	2	2
2	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2	2	0	0	2		2	2	2	2	2
2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	0	0		2	2	2	2	2
0	0	2	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	2	2		2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	0		2	2	2	2	2
2	2	2	0	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	2		2	2	2	2	0
2	2	2	2	2	2	2	2	2	2	2	0	0	0	2	0	0	2	2	0		2	2	2	2	2

<https://www.numeracyteachersacademy.com/>

<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/misunderstandings.aspx>

<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/mathsassess.aspx>

[illegible]

Q1		□, 8, 9		1) Counting Activity		x/2		2) Bonds of 5		3) Double and Halve to 1		4) Five Plus Bonds		5) Bonds of 10		x/14		6) Bonds of 6, 7, 8, 9		7) Ten Plus Bonds		8) Double and Halve to 2		x/20		9) Bonds of 11 to 20	
						Q2	Q3																				
☆ 0	0	0	☆ 0	☆ 0	☆ 1	☆ 0	☆ 0	☆ 0	1	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0
☆ 2	2	2	☆ 2	☆ 2	☆ 0	☆ 1	☆ 2	☆ 2	10	☆ 2	☆ 2	☆ 2	☆ 0	☆ 0	☆ 1	☆ 1	☆ 1	☆ 0	☆ 0	☆ 1	10	☆ 1	☆ 0	☆ 1	☆ 0	☆ 0	
☆ 2	2	2	☆ 0	☆ 2	☆ 2	☆ 0	☆ 2	☆ 2	10	☆ 2	☆ 0	☆ 2	☆ 0	☆ 2	☆ 0	☆ 1	☆ 1	☆ 0	☆ 0	☆ 0	7	☆ 2	☆ 0	☆ 2	☆ 0	☆ 0	
☆ 2	2	2	☆ 1	☆ 1	☆ 0	☆ 1	☆ 1	☆ 1	6	☆ 1	☆ 1	☆ 1	☆ 0	☆ 1	☆ 0	☆ 1	☆ 1	☆ 0	☆ 0	☆ 0	5	☆ 1	☆ 0	☆ 1	☆ 0	☆ 0	
☆ 2	2	2	☆ 1	☆ 2	☆ 2	☆ 1	☆ 2	☆ 0	8	☆ 1	☆ 1	☆ 1	☆ 0	☆ 2	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	5	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	
☆ 2	2	2	☆ 0	☆ 1	☆ 0	☆ 0	☆ 2	☆ 0	3	☆ 0	☆ 0	☆ 0	☆ 0	☆ 2	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	2	☆ 0	☆ 0	☆ 0	☆ 0	☆ 0	
	0								0												0						

What assessments will we use in 2025?

- PVAT tests in 3-6 to be completed in first week of school as a screener. Pre-PVAT (1-2) and Bond Blocks (Foundation) screeners to be used in week 9 of Term 1 .

Above tests and fluency screeners (NTA) for TLI teacher to drill down on specific skills to target

How were lessons structured?

- Fluency games were used regularly.
- New content was explicitly taught. (content was selected from pretesting).
- Students worked in groups on problem solving tasks.
- Thinking Classroom Strategies were used e.g. NPVS, random grouping, cold calling

<https://drpaulswan.com.au/resources/games/>

<https://www.mathematicshub.edu.au/understanding-maths/professional-learning/explicit-teaching-in-maths/>

<https://www.mav.vic.edu.au/ccms.r?pageid=57&tenid=MAV&NavCMD=Nextpage%7C2&ROXY=0x0000000003295310&DISPMODE=Feature>

Explicit Teaching – Number Talks

- How would you work out the answer to $9 + 3$?

Share what you did with the person next to you

- How would you work out the answer to $9 + 7$?

Share what you did with the person next to you



Number strings



Fluency Games

NINE AND ...
9+

Materials: A dice, counters in two colours.
A game for two players.
Aim: To place four counters in a row, column or diagonal.

Rules: Roll the dice and move along the track. Add nine to the number you land on and place a counter on that number in the centre square. The first player with four in a row wins.

© PAUL SWAN
www.drpaulswan.com.au

Build to Ten 9 + __

Aim: To be the first player to place 4 counters, next to each other, in a row, column or diagonally.

Materials: 1 ten-sided dice (0-9) and 2x20 counters (in two different colours)

Directions: Players take turns to roll the dice and add the number rolled to the number 9. They then place a counter on their total. The first player with 4 counters in a row wins.

Note: Use double tens frames below to build total as needed.

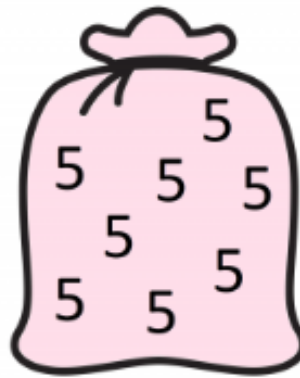
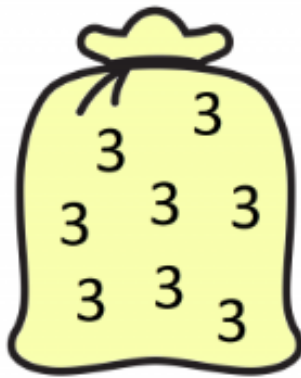
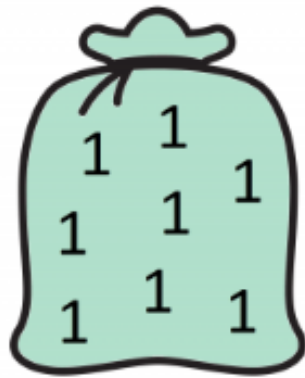
11	9	14	16	10
14	13	18	13	11
16	17	12	15	12
18	15	11	9	13
17	9	16	10	14

●	●
●	●
●	●
●	●
●	

© Amy Somers 2024

Make 37

Five bags contain a large number of 1s, 3s, 5s and 7s. and 9s



Work with a partner.

Take it in turns to pick a number from any bag to create a running total.

The winner is the person who gets the total 37.

<https://nrich.maths.org/problems/make-37>

Tracking Students

Ten more (bridging)	properties of odd ar	ten more extended	100 more	difference	ordering decimal nu	ordering decimal nu
8/10/24	10/10	14/10	15/10	18/10	7/11	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	✓	✓	✓
<input type="checkbox"/>	✓	✓	✓	<input type="checkbox"/>	✓	<input type="checkbox"/>
✓	✓	✓	✓	✓	✓	<input type="checkbox"/>
✓	✓	✓	✓	✓	✓	✓
<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	✓	✓	✓

Creating a safe environment

Relationships are critical

Turn and talk before group share.

Saying 'great question'

Letting students know when I'm unsure

White board use and classroom routines

Building in success

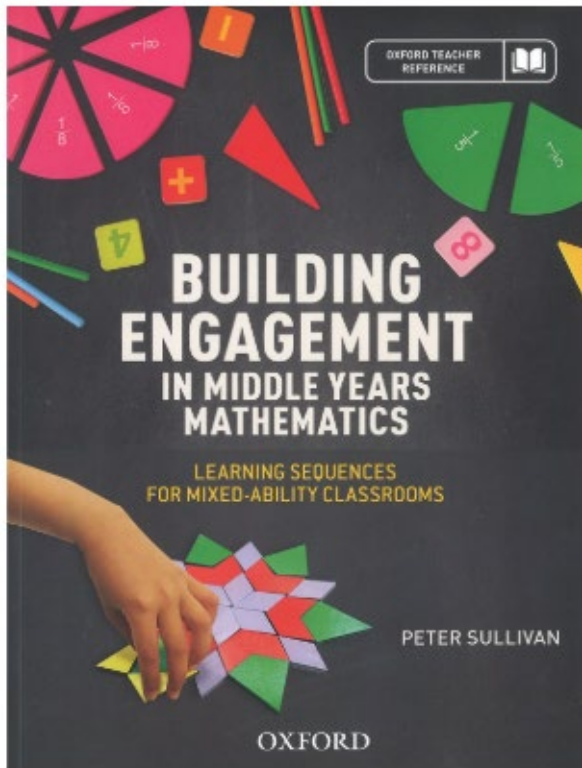
Being flexible



Tapping into students' interests



Engagement matters!



<https://www.mav.vic.edu.au/MAV-Shop>
<https://resolve.edu.au/teaching-sequences>
<https://nrich.maths.org/>



Resources

- <s://www.mathematicshub.edu.au/understanding-maths/professional-learning/explicit-teaching-in-maths/>
- <https://www.vic.gov.au/diverse-learners-hub>
- <https://www.deafeducation.vic.edu.au/professional-learning/catalogue>
- <https://omny.fm/shows/strategies-for-explicit-teaching/ep02-student-learning-needs>
- <https://drpaulswan.com.au/resources/games/>
- <https://www.mav.vic.edu.au/MAV-Shop>
- <https://resolve.edu.au/teaching-sequences>
- <https://nrich.maths.org/>



Questions?



What are your take aways?

- What's something you can take back to your school from today's session?
- What resource/s would you like to learn more about?

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