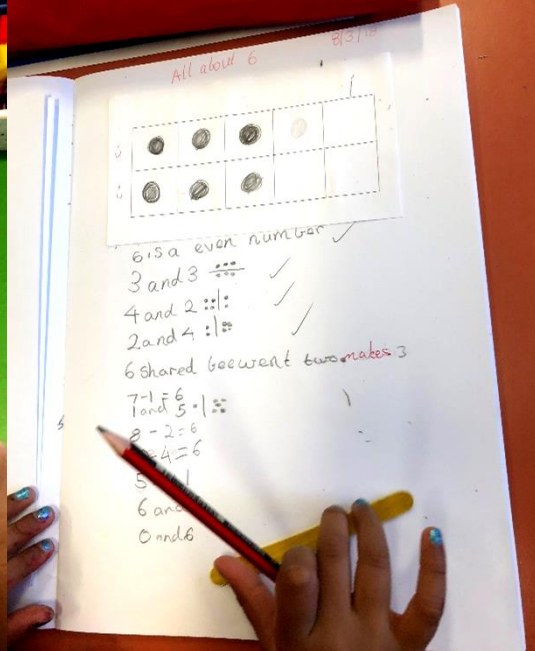


Place Value
Unit 2
Count to 3,
then to 6

Foundation /
Kindergarten
Level



Developmentally Sequenced Materials-Based Mathematics

EARLY YEARS PACKAGE

Sequential units with materials-based mathematics for F/K, Year 1 and Year 2 teachers and students

Active, highly visual and kinaesthetic hands-on learning with explicit teacher modelling and rich sessions that develop deep understanding, reasoning, problem-solving and fluency – no worksheets!

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Tried-and-tested in Australian classrooms with outstanding principal and teacher feedback and exceptional student growth results

Created by Australian Maths Leaders and Teachers for over 10 years

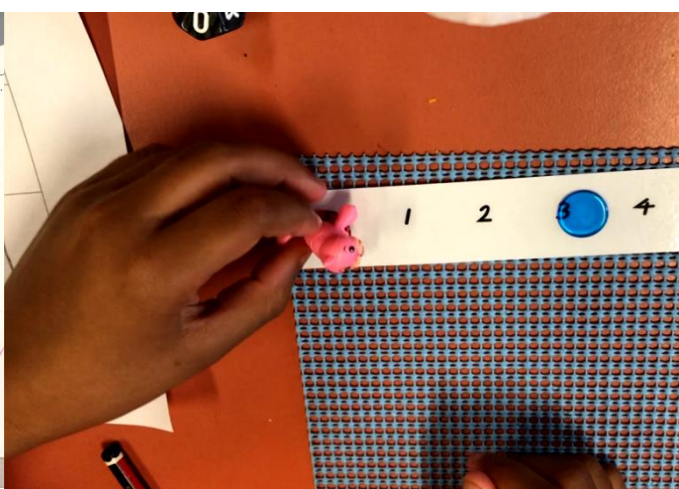
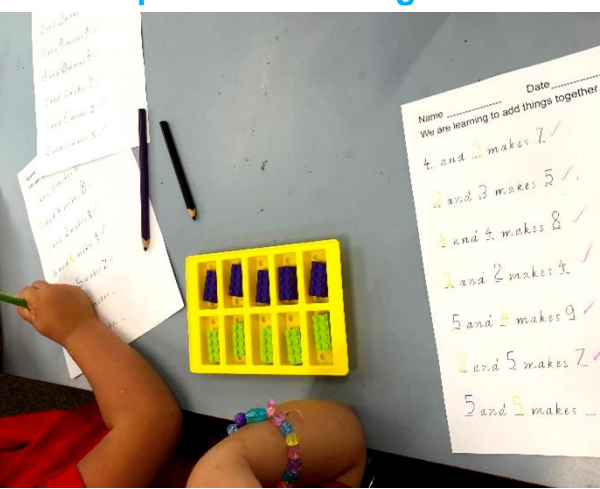
Easy-to-use: Supports Teachers and Maximises Planning Time

Authentic, Real-life Maths with more than 500 Rich Lessons

Extension and Support: Pre-planned enabling and extending prompts within each low-floor high-ceiling session

High-Impact, High-Relevance Professional Development through Fishbowl Modelling Tips, Photographs of Lessons in Action and Student Work Samples

Comprehensive diagnostic assessments to target each cohort's point-of-need, linked directly back to the sequential units, in addition to quick formative assessment options



Please note: It is not intended for teachers to attempt to deliver every lesson in this sequence, nor read the unit in full.

Units are designed as **a menu of options**, depending on the points-of-need for each class or cohort of students.




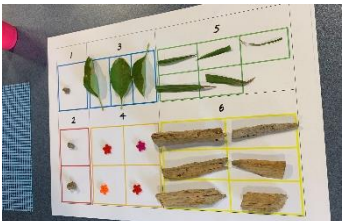

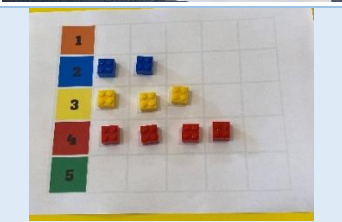
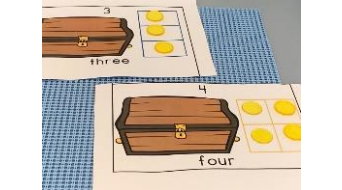

Please choose from these lesson options based on assessed needs, using either Top Ten or other strategy-focused diagnostic pre-assessments (not multiple-choice/click-the-answer assessments, as mathematics learning at its core focuses on reasoning, thinking and strategies, as well as deep conceptual understanding, not answers alone).

Please also select lessons that best suit students' interests and your own creativity and passion as a teacher.

Adjust how many lessons you deliver based on student progress during each unit, which can be noted using the [formative assessment folder](#).

Place Value Unit 2 – Count to 3, then 6

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Place Value Developmental Step 2: **Count while pointing to each object one at a time (one-to-one correspondence) and say how many there are after counting (cardinality)**

Curriculum/Syllabus Links for this Lesson Sequence

This unit is recommended for Foundation and Kindergarten students, and also as numeracy intervention for students who are not demonstrating one-to-one correspondence, cardinality or conservation.

Australian Curriculum V9 [AC9MFN03](#) and Victorian Curriculum 2.0 ([VC2MFN03](#))

Number – Foundation: Quantify and compare collections to at least 20 using counting and explain or demonstrate reasoning

- **establishing the language and process of counting, and understanding that each object must be counted only once, that the arrangement of objects does not affect how many there are and that the last number counted answers the question of ‘How many?’; for example, saying numbers in sequence while playing and performing actions**
- using counting to compare the size of 2 or more collections of like items to justify which collection contains more or fewer items
- **using counting and one-to-one correspondence to quantify the number of items required for a purpose;** for example, when asked to collect enough scissors for each member of their group to have a pair, counting each member and using the total count to know how many to collect
- discussing how different cultures may have alternative ways of representing the count; for example, discussing how some people of the Asia region use an abacus or Chinese hand gestures
- using body-tallying that involves body parts and one-to-one correspondence from counting systems of Aboriginal and/or Torres Strait Islander Peoples to count to 20

Australian Curriculum V9 [AC9MFN01](#) and Victorian Curriculum 2.0 ([VC2MFN01](#))

Number – Foundation: Name, represent and order numbers including zero to at least 20, using physical and virtual materials and numerals

- **responding to a request to collect a quantity of objects or reading a numeral and selecting the associated quantity of items from a collection to match the number required;** for example, collecting 9 paintbrushes after hearing the word ‘nine’
- recognising the order in the sequence of numbers to 20 and identifying the number that is ‘one less’ than a given number and the number that is ‘one more’; for example, playing instructive card games that involve reading and ordering number cards, or using counting songs, storybooks and rhymes to **establish the forwards and backwards counting sequence of numbers in the context of active counting activities**
- understanding and using terms to indicate ordinal position in a sequence; for example, filling in the missing term in ‘first’, ‘second’, ‘third’, ... ‘fifth’ ..., or **creating a number track using cards with the numerals zero to 20** and describing positions using terms such as ‘first’, ‘last’, ‘before’, ‘after’ and ‘between’
- recognising, writing and reading numerals written on familiar objects; for example, recognising and reading numerals in images, text or illustrations in storybooks, or **writing a numeral on a container as a label to show how many objects it contains**
- **connecting quantities to number names and numerals when reading and reciting stories and playing counting games** or determining and reasoning about the size of sets of objects within Aboriginal and/or Torres Strait Islander Peoples’ instructive games, for example, Segur etug from Mer Island in the Torres Strait region

Victorian Curriculum Number and place value – Level C: Know and match number name, numerals and quantities to three ([VCMNA036](#))

- developing one-to-one matching of number word or its representation through sign or alternative and augmentative communication (AAC) to objects initially up to three
- recognising that numerals look different from non-numeral shapes
- using structured situations to count and match groups of objects to a numeral, initially up to 3

Victorian Curriculum Number and place value – Level D: Recognise number name, numerals and quantities, initially up to five and beyond ([VCMNA053](#))

- responding to key vocabulary and questions about ‘how many’
- using one-to-one matching of number words, sign or augmentative and alternative communication (AAC) representation for objects to five
- matching numerals to the correct number of items initially to five using number games, software, cards and everyday situations

Western Australian Curriculum Number and Place Value – Pre-Primary: Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point ([ACMNA001](#))

- reading stories from other cultures featuring counting in sequence to assist students to recognise ways of counting in local languages and across cultures
- identifying the number words in sequence, backwards and forwards, and reasoning with the number sequences, establishing the language on which subsequent counting experiences can be built
- developing fluency with forwards and backwards counting in meaningful contexts, including stories and rhymes
- understanding that numbers are said in a particular order and there are patterns in the way we say them.

Western Australian Curriculum Number and Place Value – Pre-Primary: Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond ([ACMNA002](#))

- **understanding that each object must be counted only once, that the arrangement of objects does not affect how many there are, and that the last number counted answers the ‘how many’ question**
- using scenarios to help students recognise that other cultures count in a variety of ways, such as the Wotjoballum number systems.

New NSW Maths Syllabus – Early Stage 1

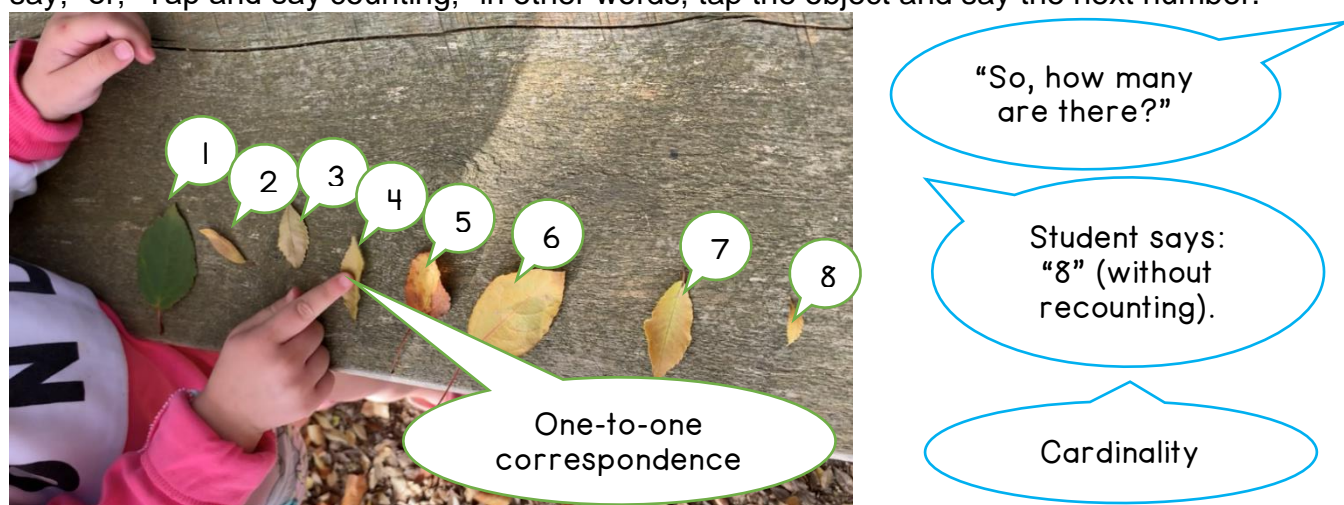
Representing Whole Numbers – Connect counting and numerals to quantities

- **count with one-to-one correspondence, recognising that the last number name represents the total number in the collection.**
- count out a specified number of objects (from 5 to 20) from a larger collection, keeping track of the count.
- **make correspondences between collections (Reasons about quantity).**
- read numerals to at least 20, including zero.
- **represent numbers as quantities to at least 20 using objects (such as fingers), number words and numerals.**
- compare and order numbers to 20.
- use the term ‘is the same as’ to express equality of groups (Reasons about quantity).

Teaching Tips

Do not aim too high too fast. For example, if a student begins school with minimal number knowledge, their first goal should be **counting to 3**, then to 5, then to 7, then to 10, not just to 10 straight away. Initially, encourage students to count objects that are set up in a neat line, for example, using the supportive structure of a [five frame](#). Developmentally, this is significantly easier for students than being asked to count objects that are jumbled.

Just because a student can chant, “1, 2, 3...,” does not mean they can count with one-to-one correspondence and cardinality. **One-to-one correspondence** means that the student can count collections accurately, often using their finger to point to each object, or move them to another side once they have been counted. The best way to say this to students is, “Touch and say,” or, “Tap and say counting;” in other words, tap the object and say the next number.



Students who are still developing one-to-one correspondence often skip objects or numbers in the sequence. As a result, these students may chant number sequences correctly (rote counting, which is the first step), but make mistakes when asked to count collections simply because they need more experiences and more practice with objects. Model placing the objects in nice straight lines and counting them by tapping each one with your finger, or sliding each object sideways so you know which ones you have counted and which ones you still need to count. This can be called the ‘slide and say’ strategy. It is ideal to develop the habit of students counting from **left-to-right, top-to-bottom**, matching the way we develop reading and writing. However, it is also important to ask students questions such as, “If you start from the middle, will the number/total/amount be different? Try it and see.”

Cardinality means that the student can tell you how many objects are in the collection. This sounds the exact same as one-to-one correspondence, however, the important distinction for teachers is that you need to ask, “So, how many are there?” after students finish counting the collection. For example, if the student says, “5,” they know that the final number they said represents the size of the group. If the student starts recounting, for example, “1, 2, 3, 4, 5,” and needs to recount each collection when you ask that question, then cardinality is something to continue to work on, until the student recognises that the final number they say represents the total. Encourage students to punctuate the final number in the collection to emphasise that this is the ‘answer’ to their count, for example, “One, two, three, FOUR!”

Parent-School Partnerships

Just like home reading for literacy, parent engagement in early mathematical skills in the form of games and basic hands-on mathematics is critical to support each child's development. There is a [home partnerships newsletter](#) in this unit's folder. This information brochure is designed for families with a student in their first year of school and outlines practical, quick counting practice that can be done at home.

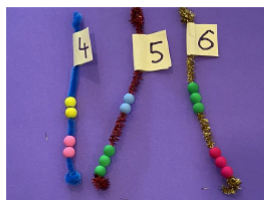
As part of transition programs, also consider running a Family Maths Night, which often proves more successful than anticipated in terms of parent turnout. This can be used for a short (30 minutes maximum) presentation to introduce parents to the way the school teaches maths, particularly the depth of focus on the numbers 0 to 10 throughout the first year and building rich mathematical understandings, as opposed to a rote-based focus on counting as high as possible. The rest of the night can include a different game in each classroom, showing parents practical and easy activities that they replicate at home. Maths is not scary!

How to Help Your Child Learn to Count at Home

Dear Parents, Grandparents and Guardians,

During the first term, one of our major focuses for maths is counting. Even if your child may be able to recite the numbers up to 20 or even to 100, we will be focusing on developing your child's deep understanding of the numbers up to 10. For example, that 3 and 4 makes 7; 7 is one more than 6 and one less than 8; 7 and 3 more makes 10; and so on.

We have provided a short list of easy and fun crafts you can create and games to play with your child at home to support their learning in the classroom this term.



Pipe cleaner counting

Materials: Pipe cleaners and beads (Officeworks, Spotlight).

How to use: Use these to practise counting, with the numbers written at the top of each pipe cleaner.

Children can focus on one particular number, such as 5, figuring out all the ways to make it. For example, push 2 beads to the bottom and keep 3 at the top, "3 and 2 makes 5." Turn the pipe cleaner around. "2 and 3 makes 5." Push another bead to the bottom. "1 and 4 makes 5."

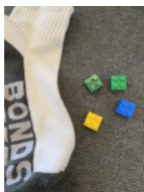
Also use these for subtraction. For example, start with the '4' pipe cleaner with all beads at the top. Show 4 take away 2 by pushing 2 beads down. "4 take away 2 leaves 2 at the top."



Counting Jars

Materials: Glasses or jars of any type.

How to use: Create collections of objects and count them. Put the glasses in order, as shown in the photo. As an extra challenge, combine two jars as an addition problem (the 4 jar with the 2 jar), what's the total?

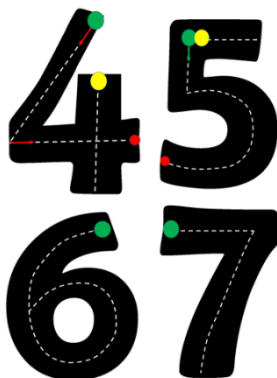


Secret Socks

Materials: Socks and marbles (or any small objects).

How to use: Create a collection of mystery socks. First, ask your child to estimate how many are in the sock by feeling it. Then tip out the objects and count them. Use 'tap and say,' touching each marble as they say the next number. Finally, arrange that number so it is easy to see. We call this using 'super hero maths eyes,' so children start to see small collections without even needing to count them. This is shown in the photo, with four gem stones arranged in the exact same way four looks on a 6-sided die.

Written by Primary Mathematics Leaders (tptenresources.com)



Bingo

Roll a 6-sided dot die and aim to score bingo before your partner rolls all the numbers!

1	2	3
4	5	6



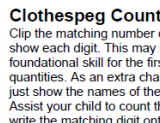
Home Hopscotch

Children jump through a home hopscotch, counting as they land on each digit. To make the hopscotch more challenging, just draw dots on each landing spot (in the way the numbers are shown on dice) or write the names of the numbers in words (one, two, three). The hopscotch squares can be made from cardboard inside or chalk outside.



Feed the Frog!

Children feed frogs or any other bug made using craft materials. This can include a shark made from a cardboard box or a rock monster (a big box with googly eyes) that eats pebbles from the backyard. Children can be asked to feed a number to their creature or roll a 6-sided die to decide their creature's dinner.



Clothespeg Counting

Clip the matching number of pegs to Uno or playing cards that show each digit. This may seem simple; however, it is a critical foundational skill for the first year of school – matching digits to quantities. As an extra challenge, make your own cards that just show the names of the numbers as words (one, two, three). Assist your child to count the matching number of pegs and write the matching digit onto each card.



We have also attached a set of our digit roads, which use a traffic light system (green for go) to show where to start each digit and its correct formation. All digits start from the top and go down (not from the bottom). This is the same for the letters of the alphabet. One exception is 5, where students start with the neck, make its belly then add on its hat. It is common for students to reverse their numbers during the first year of school, but with practice we aim for all students to be correctly forming all digits as soon as possible. This ensures students have the best chance to create excellent muscle memories and foundational skills. Our classroom digit songs are copied here:

- 0: Around and around we go to make zero!
- 1: Start at the top and down you run for one!
- 2: Curve around and slide to the right.
- 3: Around the tree and around the tree, just like a 'B' for three!
- 4: Make an 'L,' then cut in half!
- 5: Neck, belly, hat!
- 6: Curve it down like 'C' and curl it up.
- 7: Slide to the ride and slant it down.
- 8: Make an 'S' and close the gate for eight.
- 9: A loop and a line to make nine.

We greatly appreciate your help and continued partnership in our learning journey. Thank you!

Written by Primary Mathematics Leaders (tptenresources.com)

Race to 5

1	2	3	4	5
one	two	three	four	five

Family Maths Nights



Additional resources to support parents:

- Victorian brochure about ways to support your child in literacy and numeracy:
www.vic.gov.au/how-build-your-childs-numeracy-skills-birth-grade-2
- New Zealand list of tips for parents:
nzmaths.co.nz/sites/default/files/pdf/HSPNHandbook_6.pdf
- New Zealand list of games to copy into weekly parent newsletters:
nzmaths.co.nz/home-school-partnership-numeracy-activities

Formative (Ongoing) Assessment – Immediate Feedback and Year-Level Cross-Checks

Given the obstacles of literacy during the first year of school, formative assessment is even more critical and one of the best ways of doing this is by creating a cross-check template, focused on each major learning intention for the term. Create this as a team, agreeing on the success criteria for support, mid and extension students. This can then be pre-filled with easy-to-record codes, so that teachers can record their observations in short-form. Starting templates with suggested success criteria and learning intention goals have been created within this unit's *Formative Assessment* folder.

Focuses: Counting with 1-to-1 correspondence		Term 1		
Matching quantities to the digits and words		Week 1-3		
		CODES: 🟡 Counts to 3 🟡🟡 Counts to 5 🟡🟡🟡 Counts to 10 R: Role only 1-1: Counts objects, pointing to one at a time E: Counts beyond 20, for example, E = 100, then says 200 C: Conservation up to what number, e.g. C = 5 D: Can write digits for which numbers, e.g. D = 1-9, not 0 or 10 W: Can write words for which numbers, W = 1-3, not above 4		
Student	Student	Student	Student	Student
Student	Student	Student	Student	Student
Student	Student	Student	Student	Student




Students	FB				FC	FD										FE	FF	
	Can identify and create quantities				Cardinality - does not re-count when asked how many, just says the final number again.	Can write digits to represent each quantity - consistently in class (not just in assessment, without reversal)										Can match the names of the numbers to digits	Can subitise - see collections quickly, rather than count them	
	to 3	to 5	to 7	to 9		1	2	3	4	5	6	7	8	9	0	Regular format	Irregular format	
	Unit 2	Unit 2	Unit 3	Unit 3		Unit 4										Unit 4	Unit 5	Unit 6

An editable cross-check template is in each unit's folder – Formative Assessment. The [section template](#) for notes is available, as well as a [grid box template](#) with links to each unit.

One difficulty is that many teachers find this template can hamstring their teaching as they prefer to have their hands free to model with materials as they interact and engage with students, providing immediate feedback and learning opportunities throughout the session, which is the best form of formative assessment. Accordingly, teachers should feel free to fill in these templates at the very end of the session, 'downloading' their observations from the session to the page as students eat. Colour-codes can also assist, particularly highlighting in pink students that teachers wish to check-in with again the very next session or highlighting students that need another extending prompt for the next session in blue.

A cross-check can be filled in gradually over the course of one or two weeks – it definitely does not need to be completed in one session. It forms a cue for teachers to ensure they are checking on the ongoing progress of all students, using enabling and extending prompts not just for support and extension students but also for mid-range students who are struggling or doing particularly well. It also provides a reminder to have a teachable moment with each student at least once every second session. It is an excellent form of evidence and detailed note-taking for reporting, often making reports much easier as the codes can simply be written into sentences.

Warm-up Games

Game	Warm-ups for one-to-one correspondence	
<p>Air Punches</p>	<p>Air punches: Say, "Air boxing!" As a whole-class, students then count out loud together, while punching the air straight above them, one punch per number. For the first round, go to 5. For the second round, go to 7. Third round to 10. Fourth round to 15. Fifth to twenty. Call out the rounds too, "First round," to front-load ordinal numbers each day.</p>	
<p>Clap Counting</p>	<p>Clap counting: Say, "Clap counting!" As a whole-class, students then count out loud together while clapping, one clap per number. You could also try, "Mr Bean clap counting!" where students clap with one hand on top of the other, then switch the hand that is on top each time to create a very amusing, whimsical clapping motion. This also slows students down to keep the beat steady during the counting.</p>	
<p>Jack-in-the-box-counting</p>	<p>Whisper a 'jack-in-the-box' number to one student. The rest of the class counts and, when they reach the 'jack-in-the-box' number, the single student shouts, "JACK-IN-THE-BOX." Repeat with a new mystery number and different student each day.</p>	
<p>Finger Flash – like the superhero <i>The Flash</i></p>	<p>Students play in pairs. Student A pulls out any number of fingers on one hand – 1, 2, 3, 4 or 5. Student B counts (or tries to see the total using their super hero eyes/subitising), then says the total number of fingers. Student A nods or says, "Count again." <i>Finger flash displays for home learning and numeracy wall displays:</i></p>	  
<p>Extension: Use both hands as a start to addition, particularly by counting on from the larger hand, or develop their double facts by requiring these pairs to make both hands have the same number of fingers out.</p>		

Counting PowerPoint

Use the [Counting PowerPoint](#) from this unit's folder for whole-class counting warm-ups. Invite students to the board to 'touch and say' as they count, while other students can 'point and think' as they count.

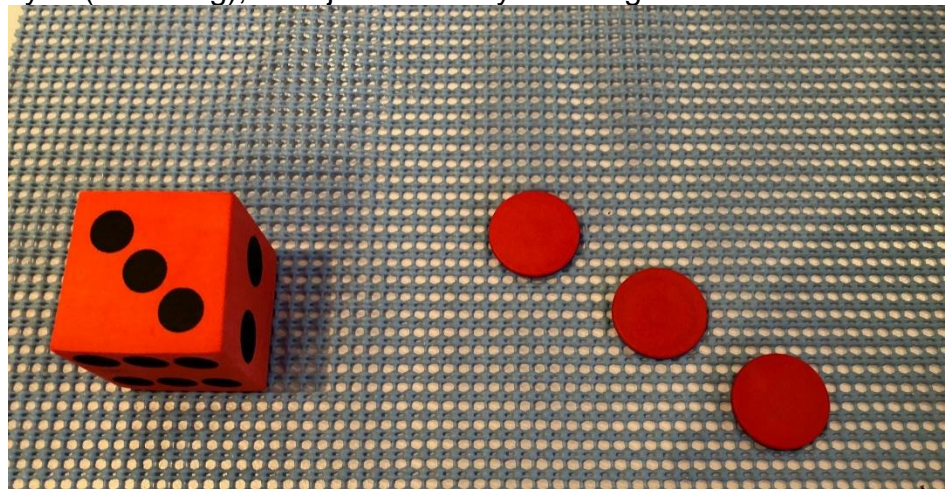


Count the class

As part of your morning routine, ask a few students (particularly support students) to count the class, softly tapping each person on the shoulder as they count the circle. The class can count in chorus with them for extra support. Does the total change if we start from a different person? Arrange the class into groups and count the groups – did the total change? What if we count from the other end of the line? What if someone moves, then we recount, did it change? Why or why not? Extension students can count by 2, 4 or 3 as an extra challenge.

Roll and make

Roll a 6-sided die (medium-sized foam if possible so that the dots are more visual). Remake what you rolled using counters. Count by touching each counter as you say the next number. Over time, try to just see the number you rolled using your maths superhero eyes (subitising), then just check by counting it.

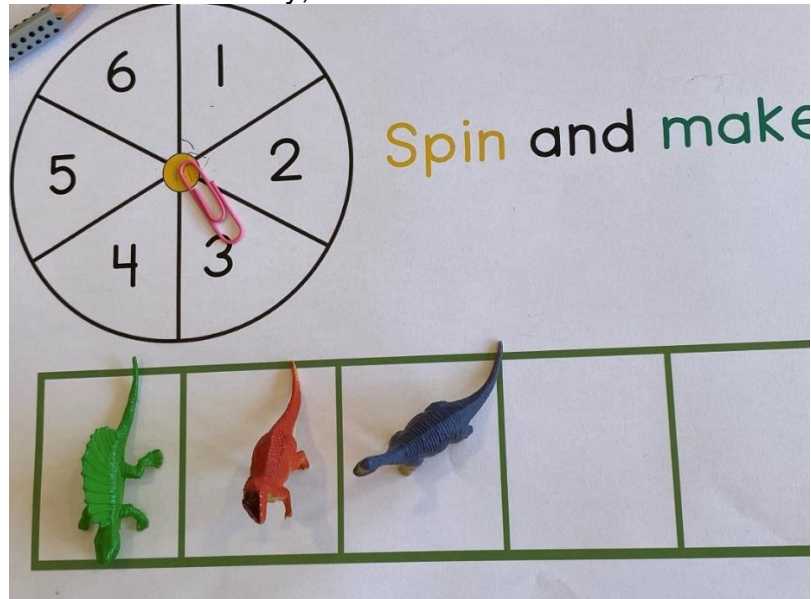


Spin and make

Use the [spin and make](#) template to spin a number from 1 to 6, then make it on the five frame with a different item each day.

To create a makeshift spinner, hold a pencil vertically inside the hole of a paperclip. Flick or push the paperclip.

Make the number using a different type of counter each day. For example, use teddy bears on Monday, counters on Tuesday, dinosaurs on Wednesday, and so on.



Extension 1: Spin and make one less than the number you spun.

Extension 2: Work out and record how many more you need to make 5 as an addition number sentence ($2 + 3 = 5$). As an extra extension, record the matching subtraction sentence ($5 - 3 = 2$).

Number stew

Make a number stew of 3! Give students a cup or container of any sort. Students need to collect as many threes as they can for a 'secret witch potion' or 'number soup of the day.'

After 5 minutes, return to a whole-class circle. Students tip out their items and check that they collected 3 by placing them on top of a 3-frame (use the [counting frame templates](#)).

Repeat the next day with 4, or 5, or allocate varying numbers to students depending on their point-of-need. If you allocate different numbers, each student could tip out their items and the others could then work out what type of number stew they made today.



Recommended for the first day or week of school, at the same time as showing the students all the different areas of the playground/yard/ specialist classrooms and while practising walking in orderly lines (being quiet super spies/silent ninjas).

**Counting
Lesson 1**

First Day Maths Walk and My Number Name

Learning intention: See the maths that is all around us and count real-life objects.
Maths vocabulary: how many, count, estimate (a thinking guess), shape, map

Incorporate it into the first day walk: This is so exciting – we are going to explore your new school! We are going to be quiet ninjas, walking in silent straight lines with a spy buddy by our side (walking in pairs). As we go, let's do a maths walk and see all the places we can find maths. Maths is literally everywhere – all around us!

Lesson summary: Inspire students' first walk around the school through a maths perspective. During the walk, navigate to the location of important landmarks using an enlarged A3-size school map (the sandpit, the playground); count objects such as the monkey bars and drink taps, chairs in the library, goalposts on the oval, trees along the path; discuss shapes (2D and 3D – do not shy away from the language); and spot symmetry. Finally, return for students to make and count their 'number name' out of post-it notes, as well as draw a page about their first maths walk around the school.

Materials:

- Detailed school campus maps are often available in the school's emergency management plan. Enlarge to A3 size and show students where you are on the map at each new location.
- [Formative assessment cross-check template](#) (see this unit's folder) to assess students as they attempt to count real-life objects, with one student taking a turn at each stop, then the class chorusing.
- [My Number Name](#) template.

Best set-up: Whole-class, as you tour the school on the very first day.

Maths is everywhere! Wherever you look, there are shapes, examples of symmetry (particularly outdoors in nature) and things to count.



**How many petals? Estimate how many flowers on each bush?
Are there more pink or more white flowers?**

Extension: Is there always an odd or even number of petals, or does it change flower-by-flower?

Stand at different compass points and describe to students what is in each direction (point to the north – that is the freeway; point to the south, that is Hunter’s dairy farm).



Read number plates in the school car park.

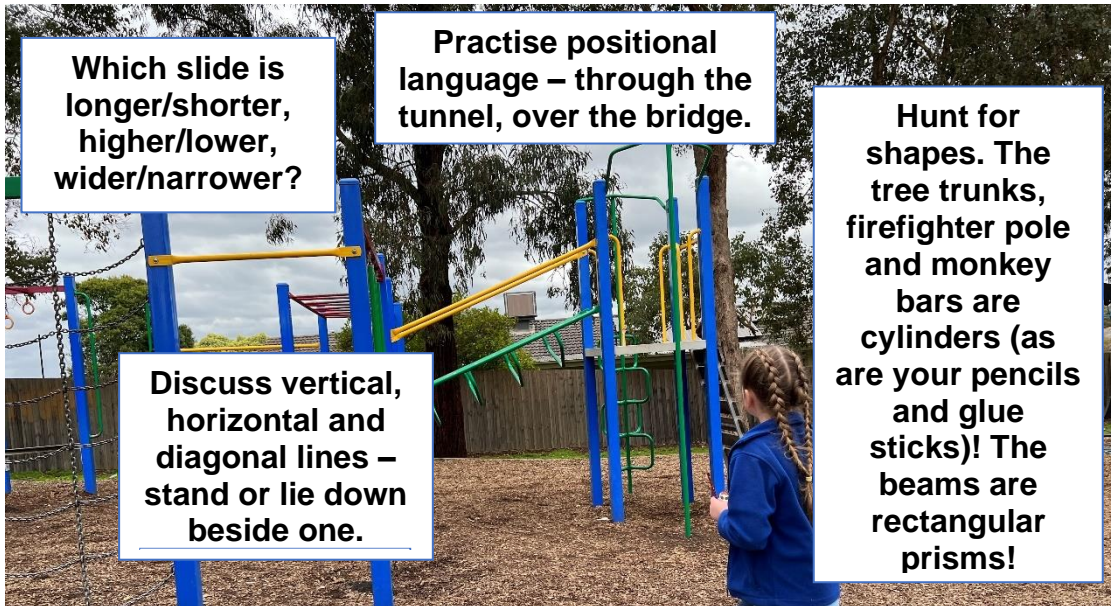


Which slide is longer/shorter, higher/lower, wider/narrower?

Practise positional language – through the tunnel, over the bridge.

Discuss vertical, horizontal and diagonal lines – stand or lie down beside one.

Hunt for shapes. The tree trunks, firefighter pole and monkey bars are cylinders (as are your pencils and glue sticks)! The beams are rectangular prisms!





Count the drink taps!

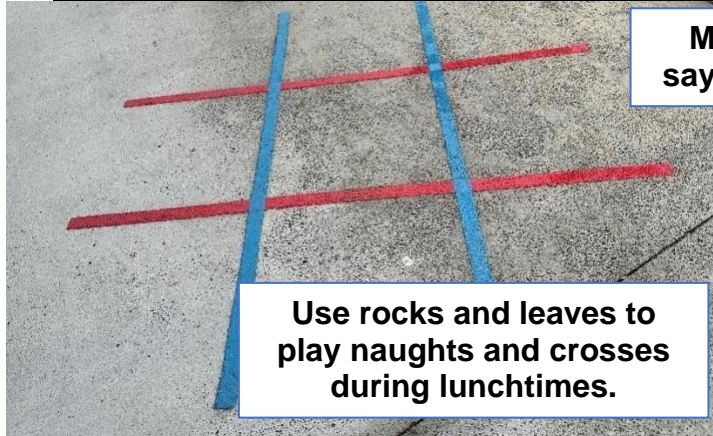
How many steps to reach the top?



Count it out – which way is less steps?



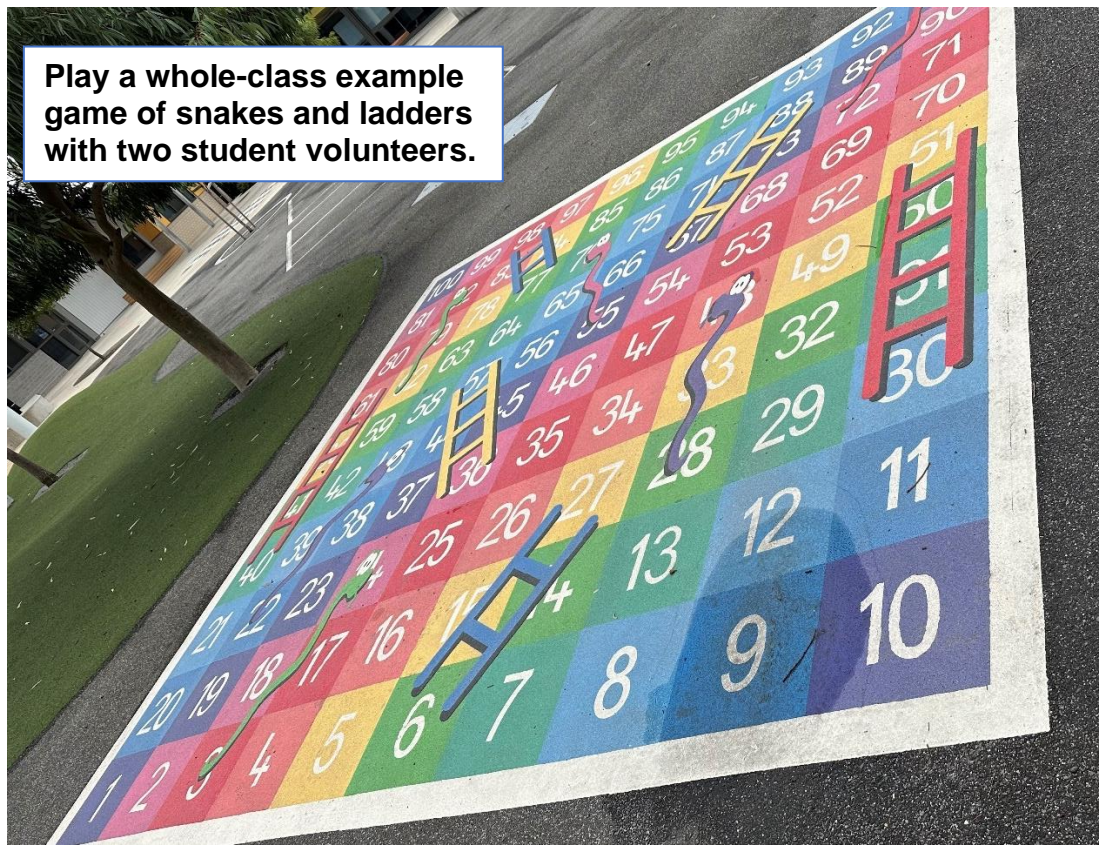
Show students the outdoor spaces available to play maths games:



Model hopscotch while saying the numbers aloud.



Play a whole-class example game of snakes and ladders with two student volunteers.



Don't forget to take a whole-class photo for first day memories!



When students return to the classroom, provide a blank A3 page and invite them to draw everything they can about maths around our school.

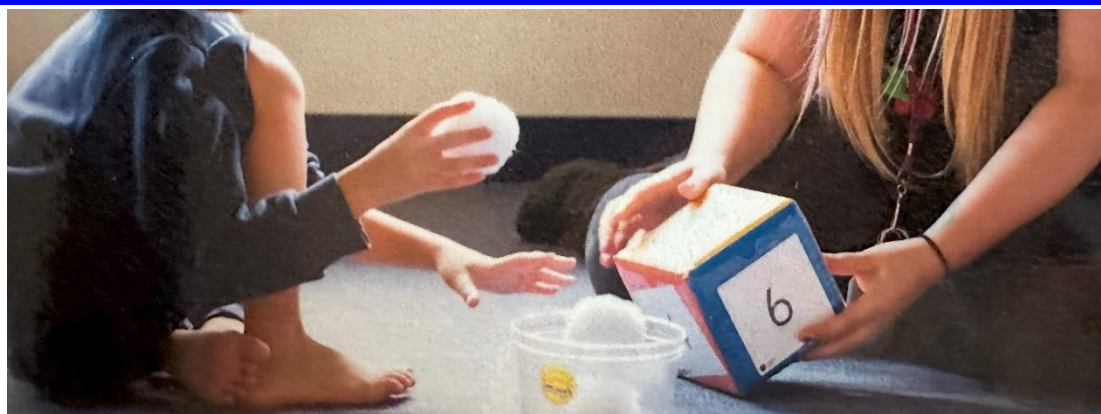
Counting [formative assessment](#) opportunity: As you walk around the school as a class, for each area, ask one student to attempt to count a real-life set of objects. When the student completes it or becomes stuck, count with the class in chorus.

Aim to make a note on your [checklist](#) whether the student who is having an attempt is counting with one-to-one correspondence (i.e. pointing to each object) or just rote chanting.

Also make note of cardinality – whether the student stops at the correct number or keeps going. If you ask, “How many are there?” does the student start counting again from zero, or do they simply say the total again.

Questioning:

- Can you estimate how many there are going to be before we count them? When we think hard and make a good guess, we call that an estimate, a ‘thinking guess.’



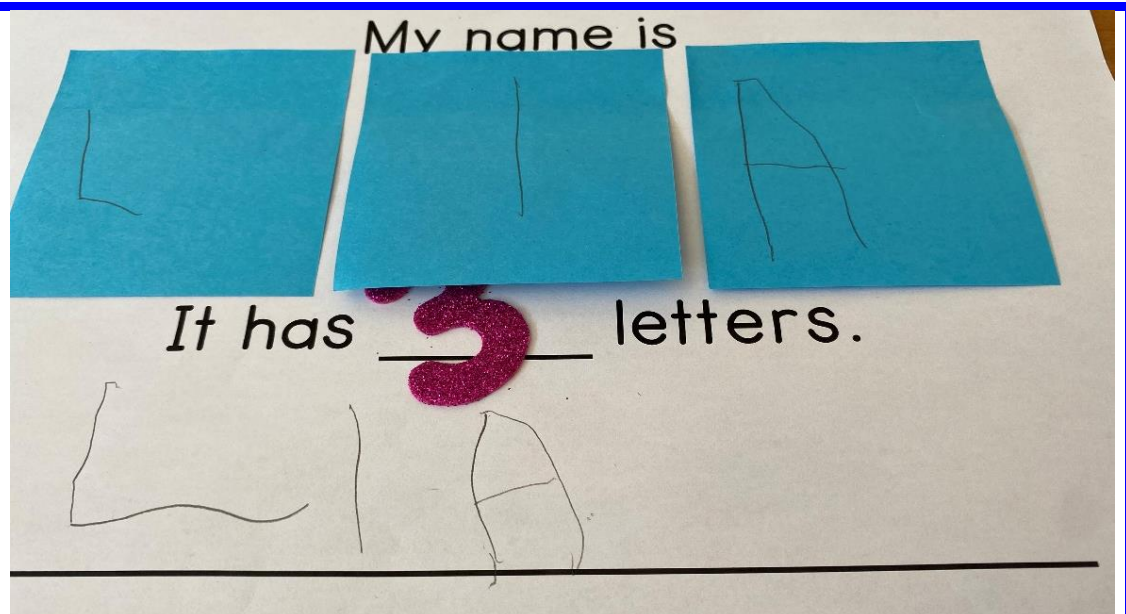
Counting initial assessment in action at Warringa Park Special School

As an ongoing whole-class warm-up, incorporate class counts into your circle time. Invite students to the middle of the circle to count a small collection of objects – ‘touch and say’ or ‘slide and say’ or ‘drop and say’ (shown above) depending on the [counting strategy](#) being modelled.

See the [Counting Strategies Overview](#) document for detailed photographs and a summary of each method.

Then invite the class to count in chorus as they slowly put one object at a time into a bucket, checking that student’s count.

Support/Extension: Use this session to hear each student attempt to count, gaining an initial assessment of their counting abilities and number awareness, then noting this on the cross-check templates.



My Number Name: This short activity and combined first literacy assessment is also ideal for the first day of school.

This template is in this unit's folder – [My number name](#).

Ask students to try to write their name by writing each letter on a square of coloured paper or post-it note (in the process assessing their literacy skills and assisting any students who need help by writing their name in front of them).

Students can then attempt to count the number of letters in their name.

Students can use foam digits with sticky backs (available from Officeworks), sticking their 'number name' to their cheek and saying 'hi' to each other using their 'number names.' **Caution:** Beware of allergies/skin irritations, and perhaps just have students carry the number in hand, rather than sticking to their cheek.

"Hi number 8!"



Counting Lesson 2

Sensory Counting Boards

Learning intention: Count to 3, then to 6, then to 8, and recognise the digits and words that represent each number of things.

Maths vocabulary: how many/what number do you see, count, digit, word

Excite the students:

Who likes arts and crafts?
Who likes tools, the sort you find at Bunnings? Well, this session is full of all those wonderful things and you get to touch and feel them all through this lesson!

Lesson summary: Students practise counting to 3 (then 6 for students who are ready) using supportive sensory boards. These sensory boards should contain a maximum of 6 objects per board (with lots showing the numbers 1 to 3 in particular), providing lots of repeated experiences of the same number with different materials.

Materials:

- Glue gun.
- Squares of cardboard.
- Foam or magnetic digits – available from most craft suppliers.
- Crafts – pom poms, buttons, bolts, toy cars, items from nature and any objects of contextual interest to students.

Tip: Make one complete set per student, either as 1-6 boards or 0-8 boards. Make with grade 6 buddies. These are designed for use throughout the first year of school (see *all the ways to use* on the next page), particularly useful for students with nearly no concept of number upon entry to their first year of school.

Best set-up: Most games described on the next page work best in pairs – maths buddies set up strategically mostly based on behaviour.

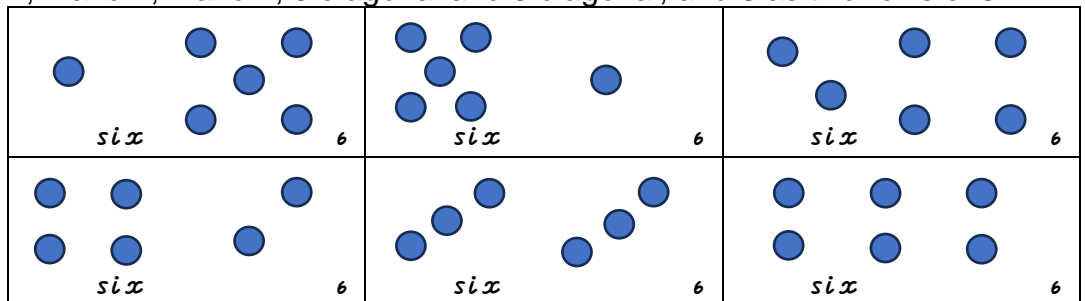


Modelling: Model using the boards to count. Emphasise for students to use “touch and say,” touching each object and saying the next number in the counting sequence. Students could then attempt to put their boards in order, forming a number line. See next page for ways to use the boards.

Questioning: What do you see? Emphasise students seeing parts using **superhero eyes** (subitising), circling their finger around the parts then the whole, rather than always counting using touch and say. The goal is for students to develop counting and subitising/superhero eyes simultaneously.

Setting up the boards – critical tips: Make the sets with grade 6 buddies. Focus on different ways to make each number. For example, 5 as 2 and 3, 4 and 1, 5 as a dice format, rather than randomly arranged objects. Make the boards proportional in size – 1 is a small piece of cardboard, 5 is medium, 8 is a large piece of cardboard.

Setting up the boards – critical tips: Focus on dice arrangements mostly. For example, arrange 6 as 1 and 5 as these look on dice, as well as 5 and 1, 2 and 4, 4 and 2, 3 diagonal and 3 diagonal, and 6 as two rows of 3.



Example at Herberton State School: The work of a passionate Prep teacher:





Example of a dice-oriented set-up that emphasises part-part-whole and ways to see (subitise) each total, "I see 4, I see 1, I see 5!"



"I see 2 and 2 and 1 is 5!" Or "two 2s and 1 is 5."

All the ways to use the sensory counting boards:

- **Visualising numbers:** Spread all boards out, face-up. Play 'I spy,' collecting an assigned number based on each student's point-of-need (support student is collecting all the number 1s; extension student is collecting 7 and saying 'I see 5, I see 2, I see 7,' recording all the ways to make 7 using [number bonds](#), then fact families beneath if capable as a set of four equations $2 + 5 = 7$, $5 + 2 = 7$, $7 - 5 = 2$, $7 - 2 = 5$).
- Memory game – all upside-down, aim to find two with the same total.
- **Feeling quantity and numerals:** Blindfold your partner (pull their hat over their head, face in t-shirt) and push a board in front of them. Give your partner time to feel the quantity and digit, then have a guess. Alternatively, put the board in their hands behind their back (if blindfolds are not available).
- Put foil over a board for your partner. Your partner feels it out and has a guess. If the foil breaks, there is no point scored for that round.
- **Comparing, then ordering:** War – all boards upside-down in a pile. Pull a board each and work out whose number is "bigger" (next day, "more," next day, "greater"). Reverse war – "smaller," then "less," then "fewer." Finally, equal – "same", "equal," "equivalent," aiming to pull the same as a team.
- Number line game – all boards upside-down in a pile. Pull one at a time, aiming to connect 4 consecutive numbers before your partner does so with their own number line. *Tip:* Face the same way, with one partner making their number line beneath the other's (north and south number lines).
- **Part-part-whole:** Roll a 6-sided dice (dot dice) and collect all matching boards. The use of dot-dice is important, as it will show a quantity representation, rather than a numeral alone when using 10-sided dice. Say the way that total has been made as you collect, "4 and 2 is 6, 5 and 1 is 6," or do your 'I see', "I see 4, I see 2, I see 6!"
- Hand a board to each student. Find your one more/less friend. Find your 5 fact. Find your 7 fact (avoid an exclusive focus on 10 facts).
- Pull two boards – count on by putting the larger board literally ON your head, then tap the smaller board's objects as you count on.
- Pull two boards – subtract the smaller from the bigger number by covering that quantity over the bigger board using the smaller board.
- **Extension:** Skip-count by putting the same board out in a row.
- **Extension:** Work out fractions of each board, "2 out of 5 are blue."

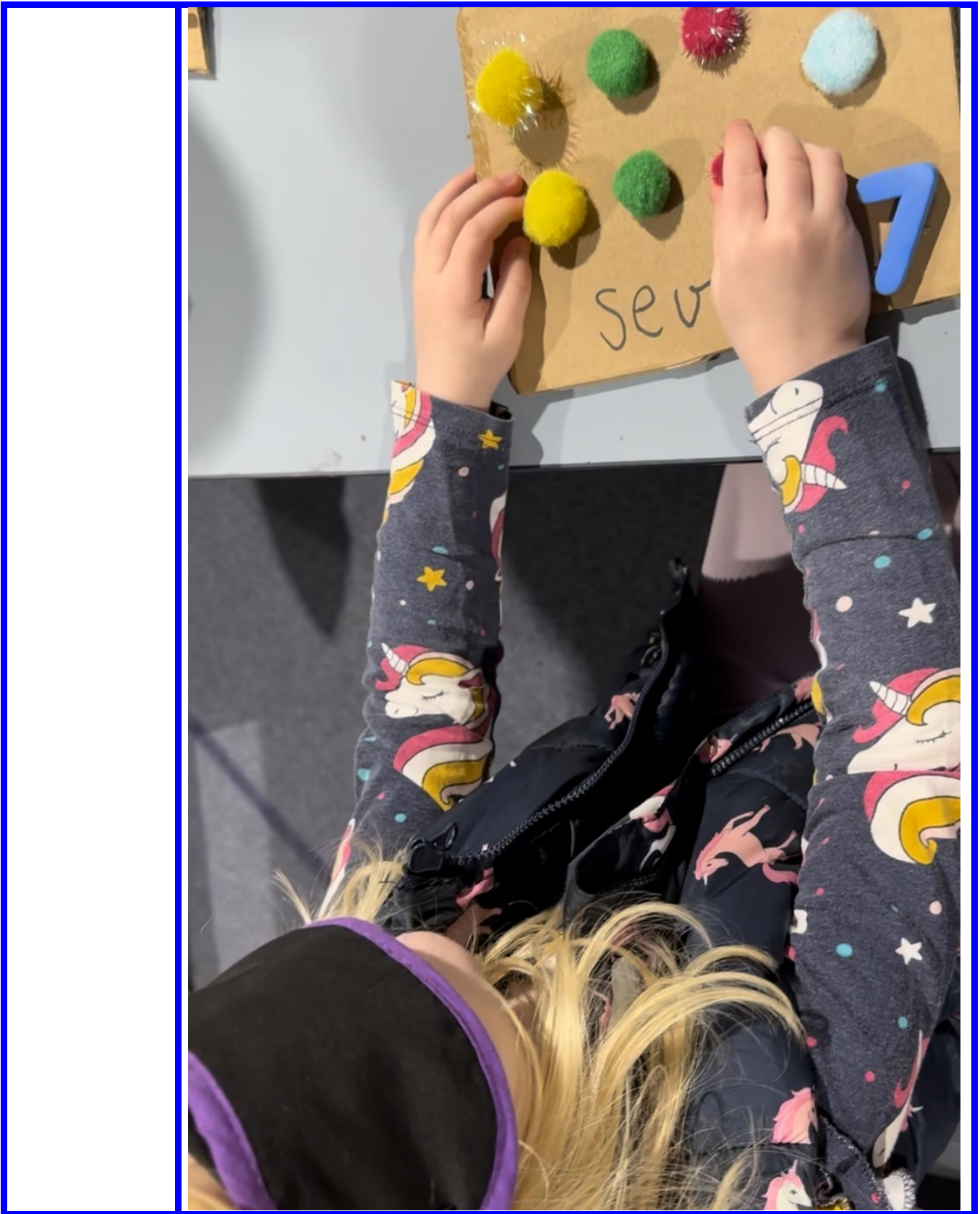


Blindfold version in action at Murrayville Community College in Prep





Blindfold version in action in a preschool setting





Blindfold version in action in a preschool setting



'I spy' in action at a preschool in Melbourne's east



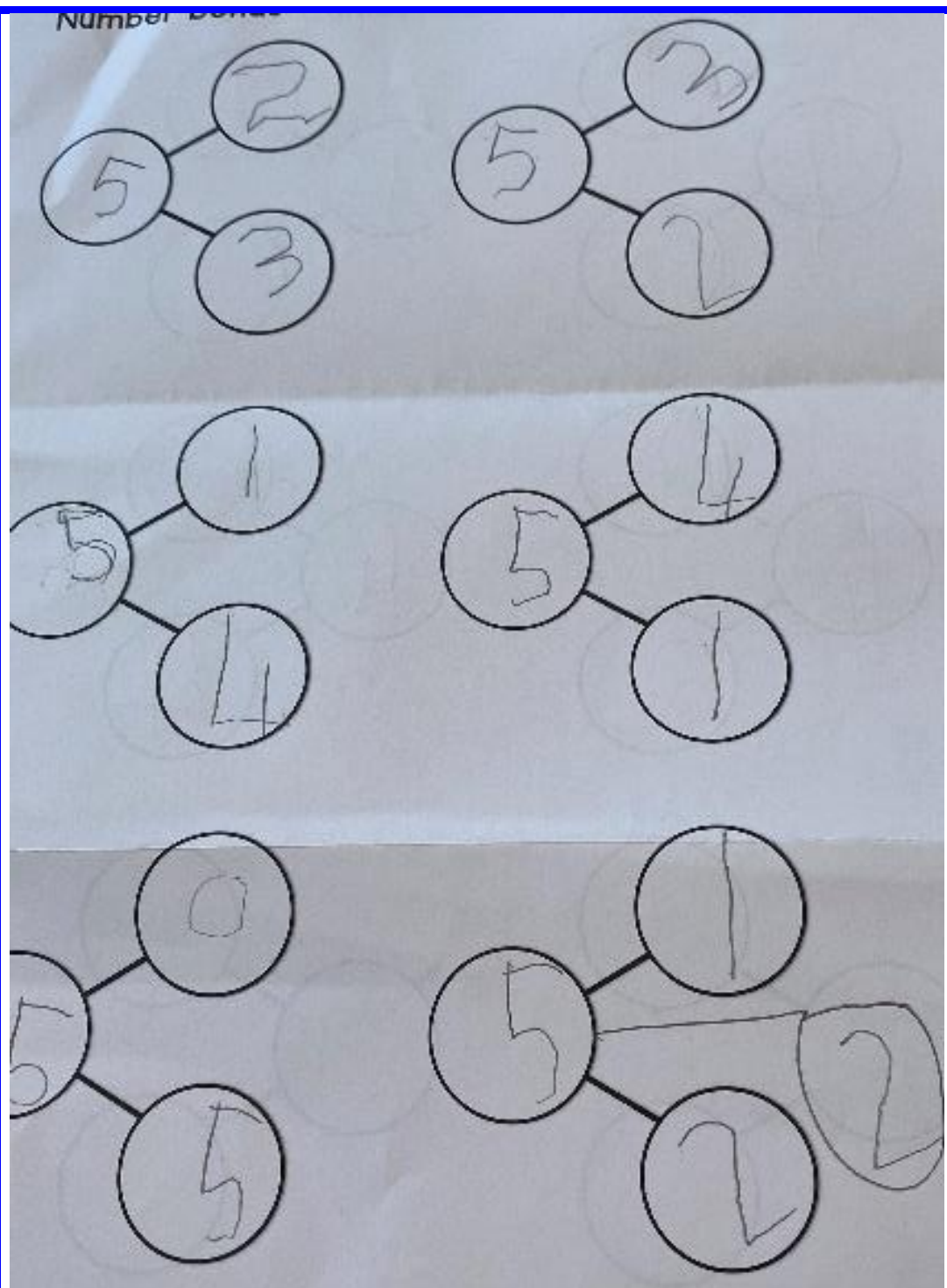


'I spy' in a preschool setting with 3-year old children



I spy 7!





Use the [number bond recording template](#) to record all the ways to make a board

If a student cannot write digits, use dots. If a student cannot write at all (specialist settings), use a stamper on an enlarged version of this template, or the teacher can record for the student.

Top 10



Use your super hero maths eyes! Name: _____

I see...	I see...	👁️👁️ I see...

Alternative recording template: "I see...I see...I see..."

Support: Provide numbers they are ready for, adding to their set over time:

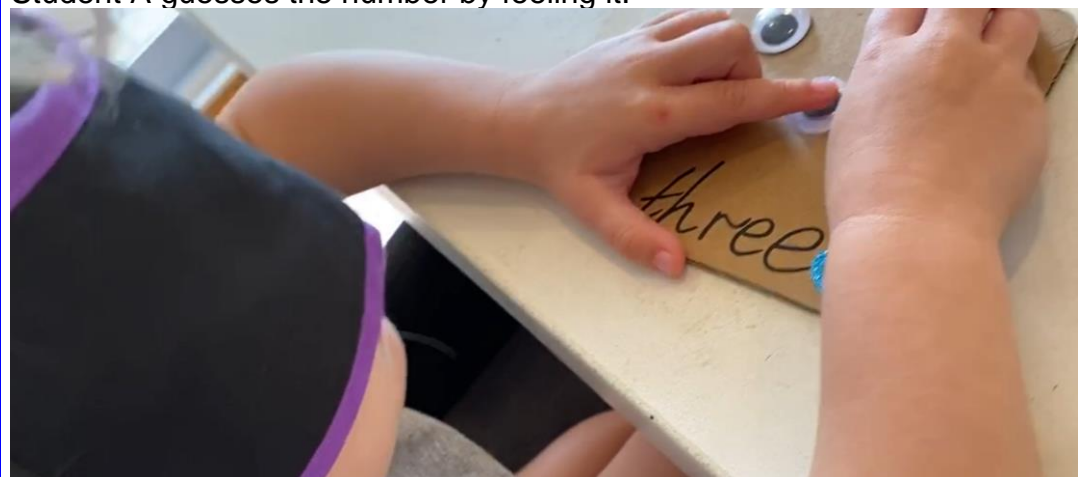




Arrange some boards in the same way as dot dice, and others in a part-part-whole fashion that highlights the ways to make that number (3 as 2 and 1, 1 and 2, 3 and 0) to encourage both structured and flexible subitising.

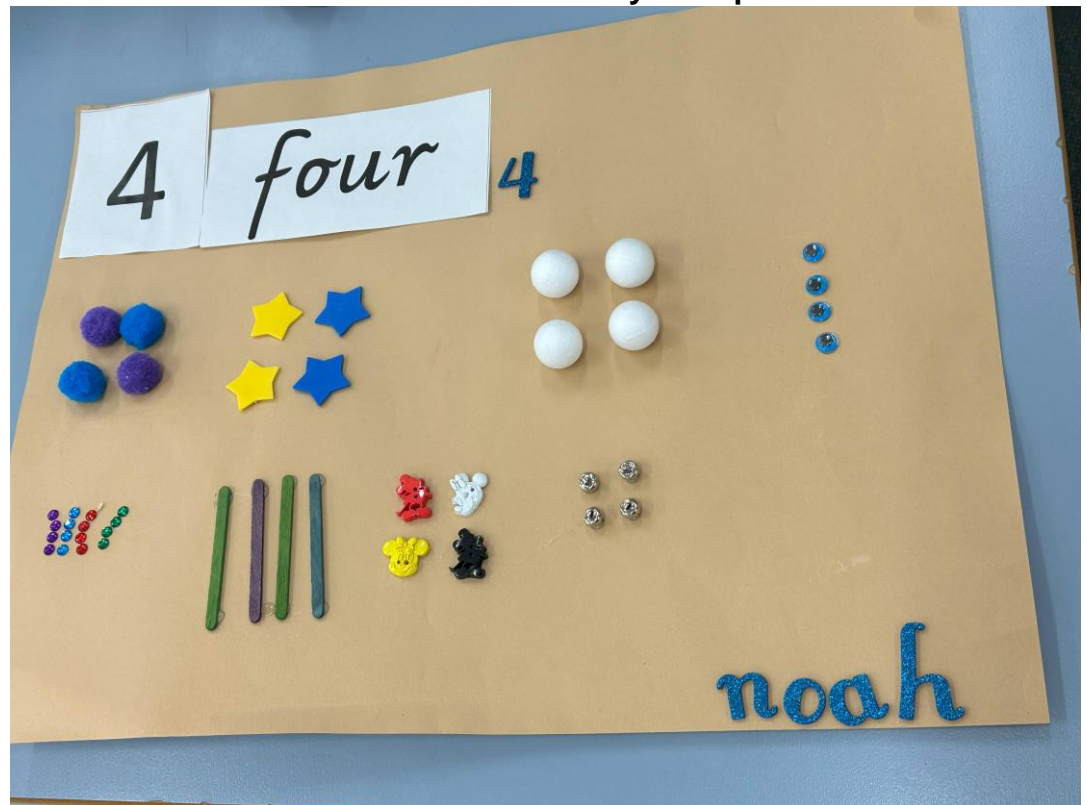
Best way to use these: Blindfolds!

Student A puts on the blindfold. Student B pushes a board in front of them. Student A guesses the number by feeling it:



Extension blindfold variation: While blindfolded, students try to find two sensory boards that are the same quantity from a collection of 5 that their partner has laid out (2 boards are the same total, 3 are all different).

Celebration board created by a Prep student:

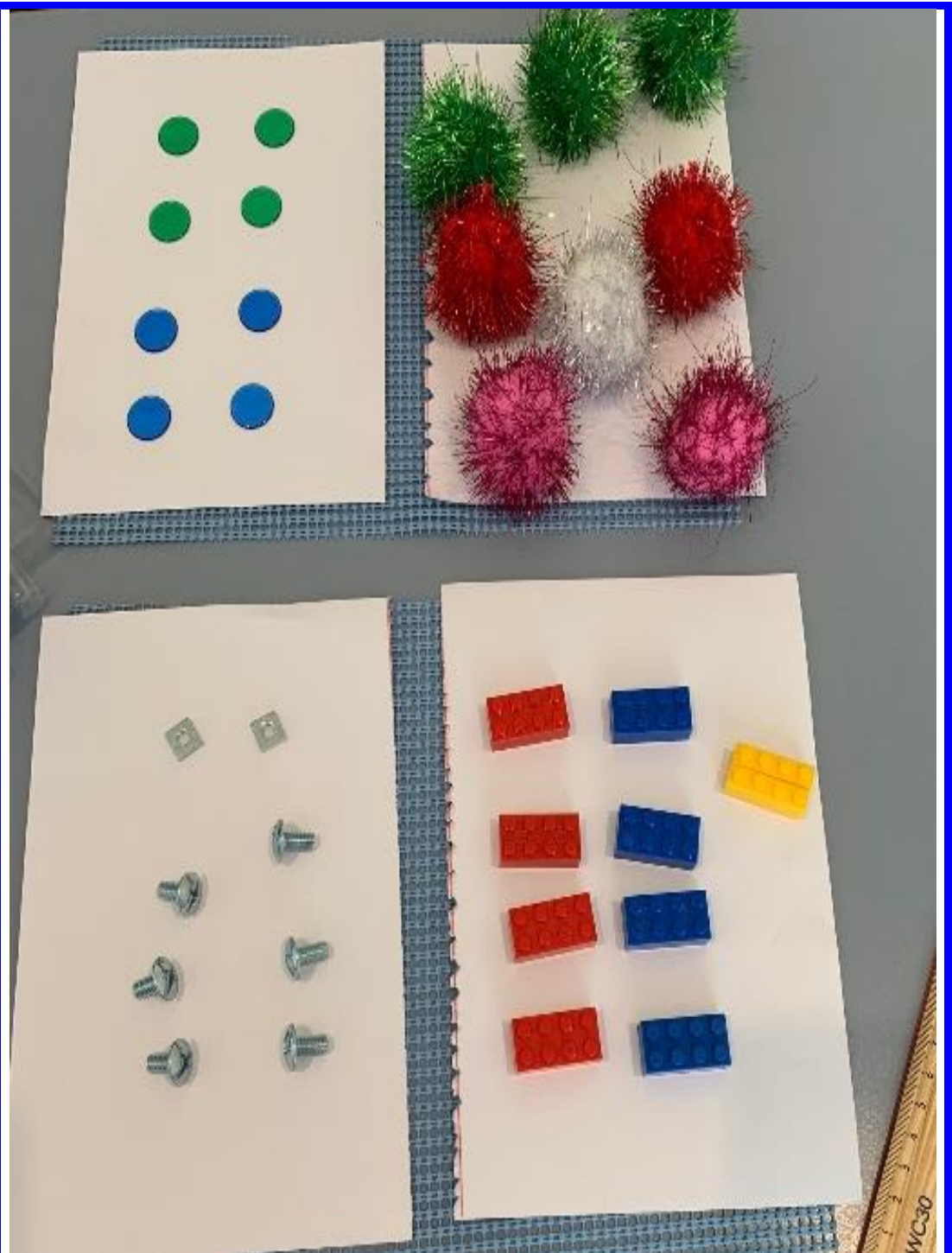


Murrayville Community College

Meaning of zero: What would a zero board look like? Can you show me? Provide students with some small squares of paper or cardboard to make their zero cards, which should not take long!

Support 2: Ensure that support students take home a set of these each night within their home reading bag. Start with a 1 to 3 set, then work up to 1 to 6, and finally 1 to 10. Change the set each morning as part of reader swap routines, so there are always different objects and an exciting new set to practise with parents each night.

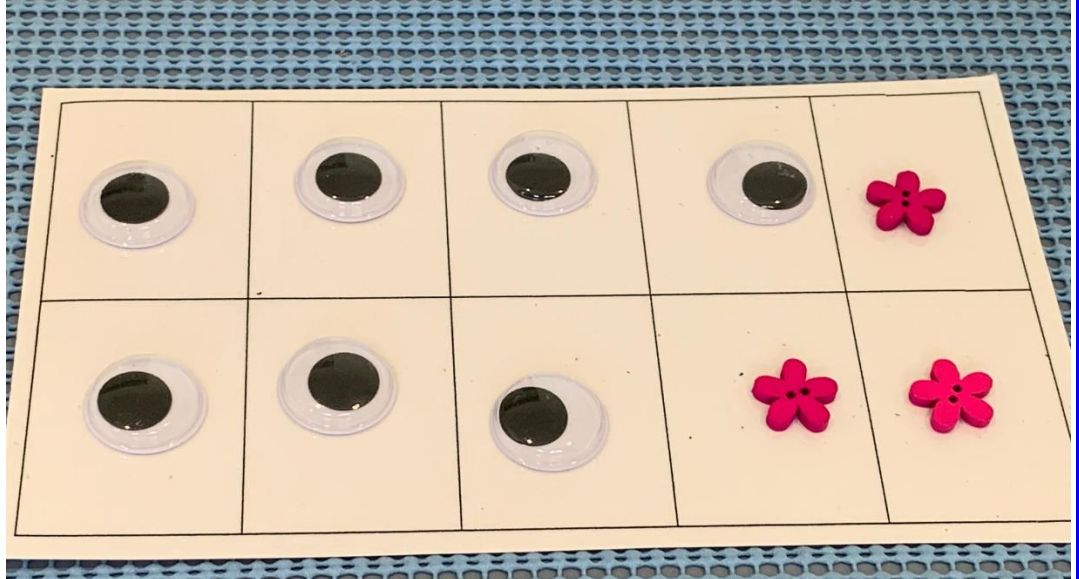
Extension 1: Say what is 'one more' by flipping over a board and adding an object to it, or mentally figure out one more by imagining an extra item. Figure out 'one less' by flipping over a board, then covering one item with their pointer finger. Record using the templates from [Place Value Unit 8](#).



Extension 2: Make their own boards based on an assigned number, showing all the combinations for a higher number like 7 or 8, as shown here with *all the ways to make 8*:

This is developing extension students' partitioning skills – knowing all the combinations that make 3 to 9. Students could record using [_and is_ templates](#) or the [number bond templates](#) from Addition Unit 4.

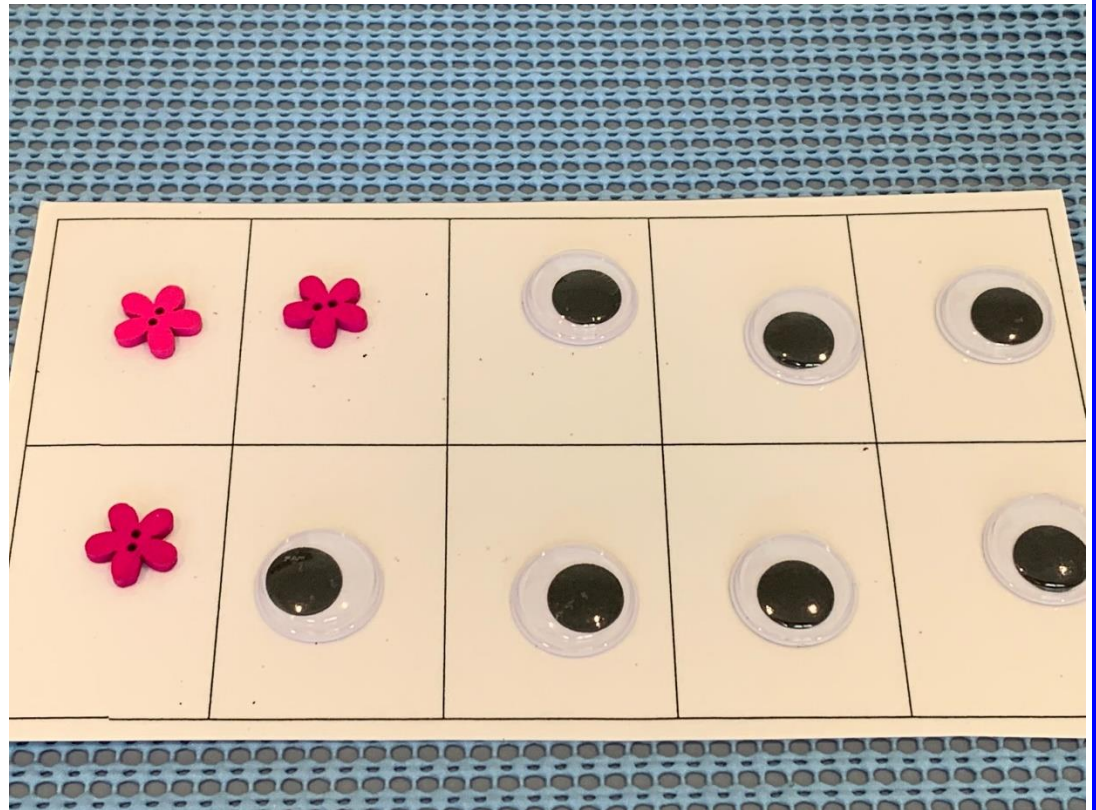
Extension 3: If an extension student can already tell you orally, without materials, 7 is made of 3 and 4, 5 and 2, 6 and 1, 7 and 0, and can do the same for all numbers from 3 to 9, use the craft materials in ten frames to develop the 10 facts. Place one type of material in a laminated ten frame, and another type in the remaining spots. For example:



7 and 3 is 10

$$7 + 3 = 10$$

Turn it around:



3 and 7 is 10

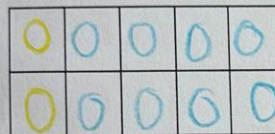
$$3 + 7 = 10$$



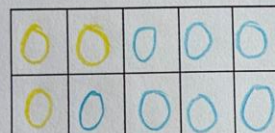
0 and 10 makes 10 ✓



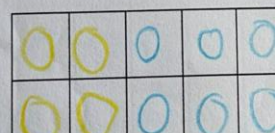
1 and 9 makes 10 ✓



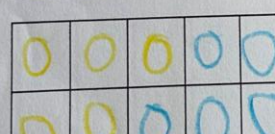
2 and 8 makes 10 ✓



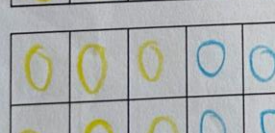
3 and 7 makes 10 ✓



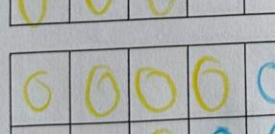
4 and 6 makes 10 ✓



5 and 5 makes 10 ✓



6 and 4 makes 10 ✓



7 and 3 makes 10 ✓

Evelyn

11/5/22

Templates for all numbers from 4 to 10

The following session is recommended for an entire week, focusing on one digit per day starting from 1 and ending at 5, throughout the very first two weeks of school. Do not wait to start maths – it needs to start from week 1 (ideally day 1 of the year).

Counting Series of Lessons 3

Digit Crafts

Learning intention: Show the meaning of the numbers 1 to 5
Maths vocabulary: count (slide and say)

Your new number pet:
 You were walking home from school last night, when you heard the pitter patter of feet just behind you. You turned around, thinking it was a kitten or puppy following you, but it was not! It was, in fact, a number pet! It did not have a collar, so you took it home for the night to give it some food, as it was hungry and needed a place to stay until you found its owner. Give it a name.

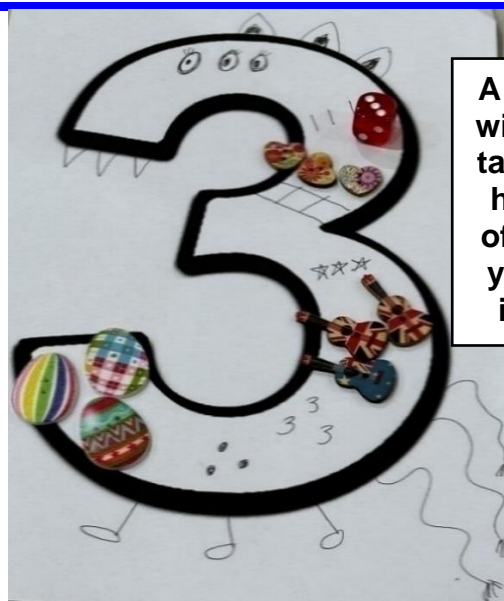
Lesson summary: Students use each blank digit template or the digit roads to visually show all the things '4' could be, e.g. 4 buttons, 4 hearts, 4 stars, etc.

Materials:

- **Digit templates.** [A3 size](#) is recommended, although [A4 size](#) is also available in this unit's folder.
- **Digit roads** following creating each digit – sing the song together as students trace around each digit with their green traffic light/counter.
- Craft materials, such as googly eyes, buttons, star stickers and so on. If unavailable, use natural items and drawing.
- Two-sided counters – ideal for showing the ways to make each total.

Best set-up: Whole-class model around a circle, then students work on their own digit within a whole-class circle to enable more immediate feedback.

Class management tip: Distribute materials in small containers to the middle of the class circle or group desks to minimise student movement. Collect nature if craft materials are in short-supply. Run as a 15-minute task for two weeks straight (day 1, focus on 1; day 2, focus on 2; day 3, focus on 3; but then circle back – do 1-5; then 1-7; then 1-10). For support, circle through 1-3 repeatedly.



A number pet with 3 teeth, 3 tails, 3 legs, 3 horns and 3 of everything you can find in its belly!

Feed your new pet 3!

(Let's say students are doing 3 that day). You feed it 2. It keeps whimpering – still hungry! You feed it 4. It vomits everywhere! So, 3 can only eat 3. But it can eat 3 of anything – 3 bolts, 3 butterflies, 3 googly eyes. Even turn it into an actual pet by drawing 3 arms, 3 legs, 3 bits of hair, 3 horns, 3 eyebrows... Use tally marks; write its name as a word on its new collar; there is no end...

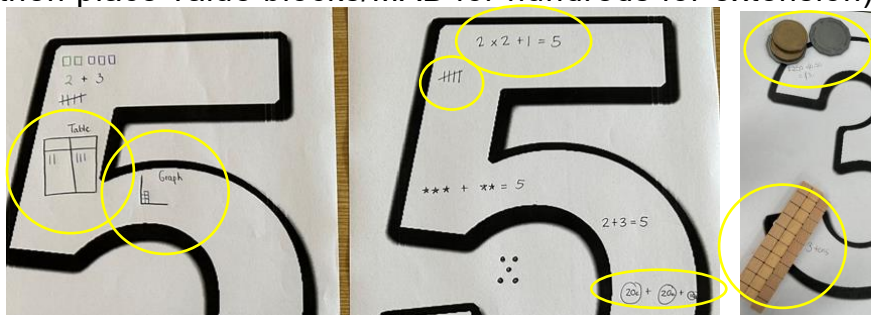
Craft maths: Who likes doing crafts and using fun materials like stars, buttons and googly eyes? Today, we are doing arts and crafts maths!



Teacher modelled examples (drawing and lolly versions)



Teacher modelling of other ways to record – extending prompt (tally marks, graphs, coins as ways to make 50¢ connected to ways to make 5, as well as if you know $2 + 3$ is 5, you also know $20 + 30 = 50$, and $200 + 300 = 500$ using popsicle stick bundles for tens, then place value blocks/MAB for hundreds for extension):



YouTube

hook: Shows numbers with different objects for each:

[youtube.com/watch?v=7yRzAFKviyk](https://www.youtube.com/watch?v=7yRzAFKviyk)

Emphasise that 1 could be one heart, one donut, one train, one drink bottle, etc. and ask students to brainstorm more examples.

Continue to play counting songs from [Place Value Unit 1](#) as warm-ups.

Modelling: Introduce the digit of the day. Build up from the previous day's learning, for example that 3 is just one more than 2 or the very next number. 2 is one less than 3. Emphasise for students to use "slide and say," sliding on each new item as they say the next number in the counting sequence.

Emphasise that the digit, for example 3, can be 3 of ANYTHING, so you can have 3 buttons, 3 stars, 3 love hearts, 3 smiley faces, 3 people, etc. Model this with your own example on top of the digit's template. Students can also use drawings of things or nature from outside, particularly when classroom materials start to run low.

Note: The container in the top right-hand corner with objects for easy collection, which is passed along the desk or around the circle once that student uses it.



Reflection tip: Upon completion, pick one student's personal best work, take a photo and post it to your numeracy wall, building a sequential number line and/or make a whole-class culmination together using [A3 size](#), with each student contributing one element.



In action with preschool 4-6 year old children at a bush kinder



Note the use of the 'plates' for the 'number monster's meal' as support. Put the food on the plate, then feed it to your new number monster pet:

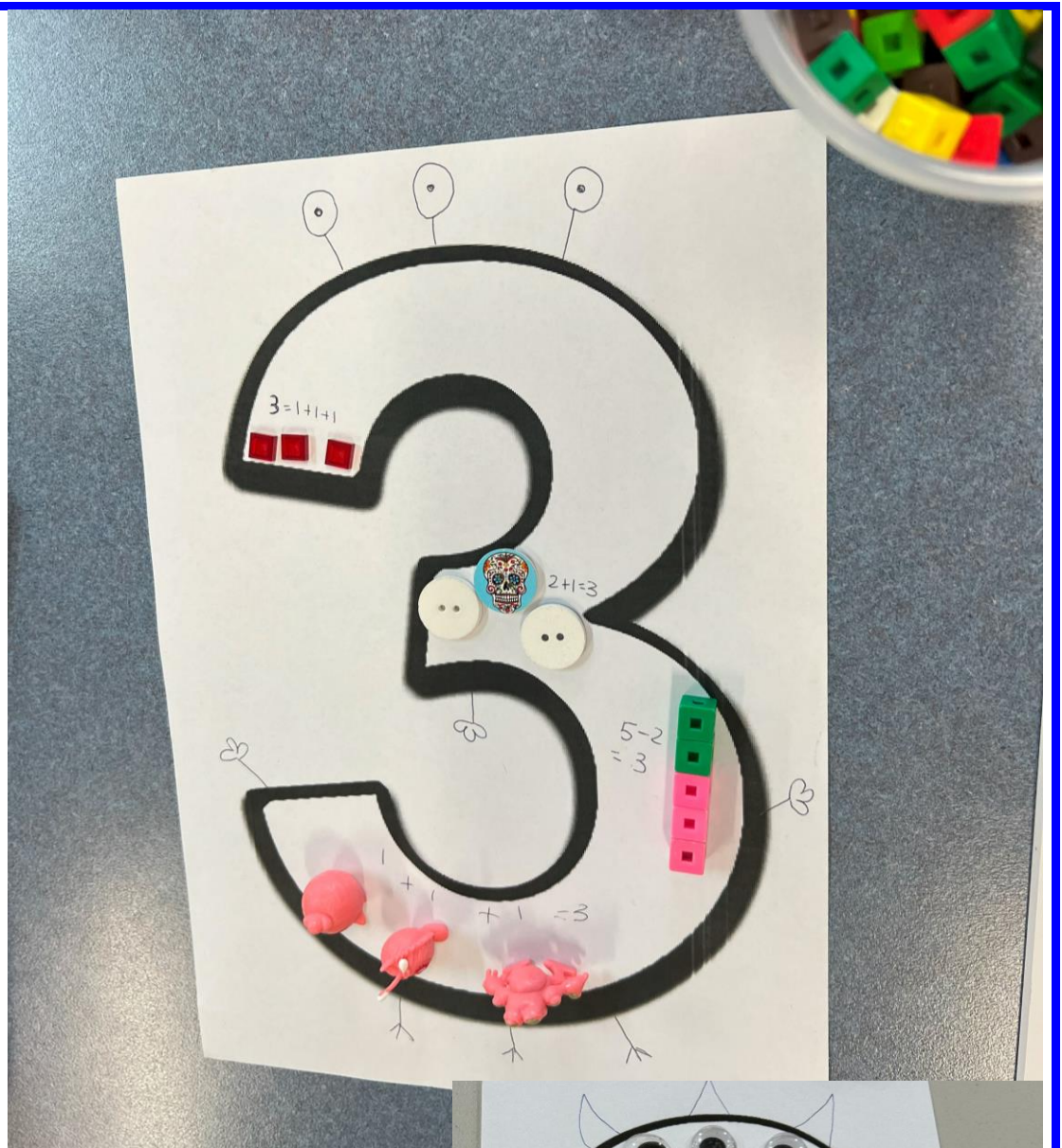












It adds more engagement for students to name their new number pet; for instance, this '3' is called BOB!



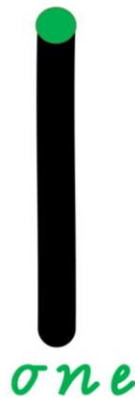
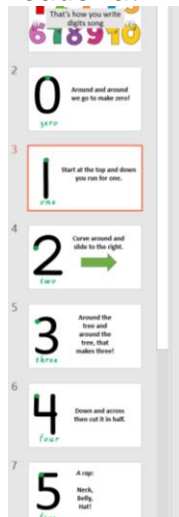


Task in action with teachers during a Top Ten Intensive Hands-on Mathematics Workshop at Mernda Park PS:



Digit Formation: During this week, on the day for each digit, we also highly recommend singing the song for each 'digit road' with students tracing around it (first with green counters, then with pencils on the second page of each digit road). [Digit road templates](#) are in this unit's folder and explained in Unit 4 on Digit formation. The songs for each number are in this unit's folder – see the [Digit Songs PowerPoint](#).

Credit for the development of the matching PowerPoint to Rebecca, Maths Leader at Thomastown East P.S.



**Start at the top and down
you run for one.**



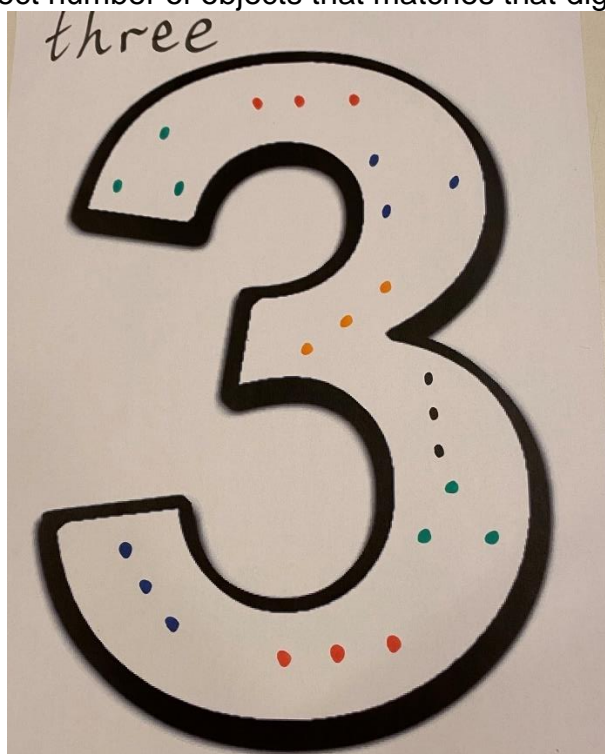
A rap:
**Neck,
Belly,
Hat!**

Questioning:

- Can you arrange the materials so that it is easy to see the number?
E.g. 5 buttons in the same arrangement as the dice, or 5 googly eyes as 2 and 2 and 1 more, etc.
- What would the zero digit end up looking like? How many googly eyes should I put on? How many buttons? How many stars? NONE! Nothing! Zilch! Zero of them!

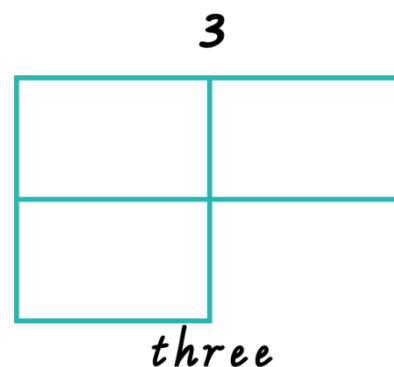
If you have more than enough materials, students could keep all the digits set up on their desks or even paste the materials down. If students keep the digits set up till the end, take photos of their work just before pack-up.

Support: When support students are making theirs, draw dots to ensure they put the correct number of objects that matches that digit:



Bold 1 to 3 templates are available for support.

Alternatively, use the **counting frames** – cut out the ‘3’ frame to support the student. Push the items into the frame (the plate), then towards the digit (the mouth):



Link the appearance of the digit to its quantity by using stick dots or counters, particularly for support students:



Extension 1: Write number sentences on the digit, including subtractions:

$2 + 3 = 5$
 $3 + 2 = 5$
 $5 - 3 = 2$
 $5 - 2 = 3$
 $5 - 1 = 4$
 $5 - 4 = 1$
 $2 + 2 + 1 = 5$
 $5 - 2 = 3$
 $5 - 3 = 2$
 $4 + 1 = 5$
 $5 + 0 = 5$
 $2 \times 2 + 1 = 5$
 $5 \div 2 = 2 \text{ r } 1$

+ means 'and'
 - means 'take away'
 x means 'groups of'
 ÷ means 'shared between'

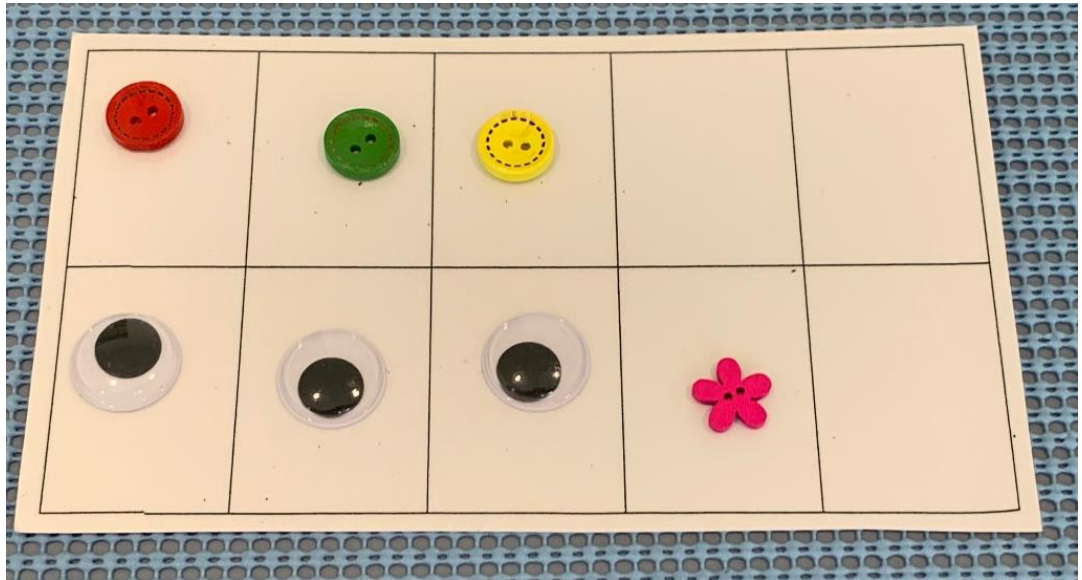
Extension 2: If you know $2+3=5$, what else do you know? Use popsicle stick bundles or place value blocks (MAB) if appropriate for the student, and even coins. For example, $20 + 30 = 50$, $200 + 300 = 500$, $20^c + 30^c = 50^c$ or $0.2 + 0.3 = 0.5$, or $2/10 + 3/10 = 5/10$, whichever are appropriate for that student.



Use place value blocks (MAB) and coins.

Alternative set-up for extension: Using a number such as 7, figure out all the ways to make it. Write 'All the ways to make 7!' as their heading on top of a blank A3 page. Then the student uses the craft materials to make 7 multiple ways, for example:

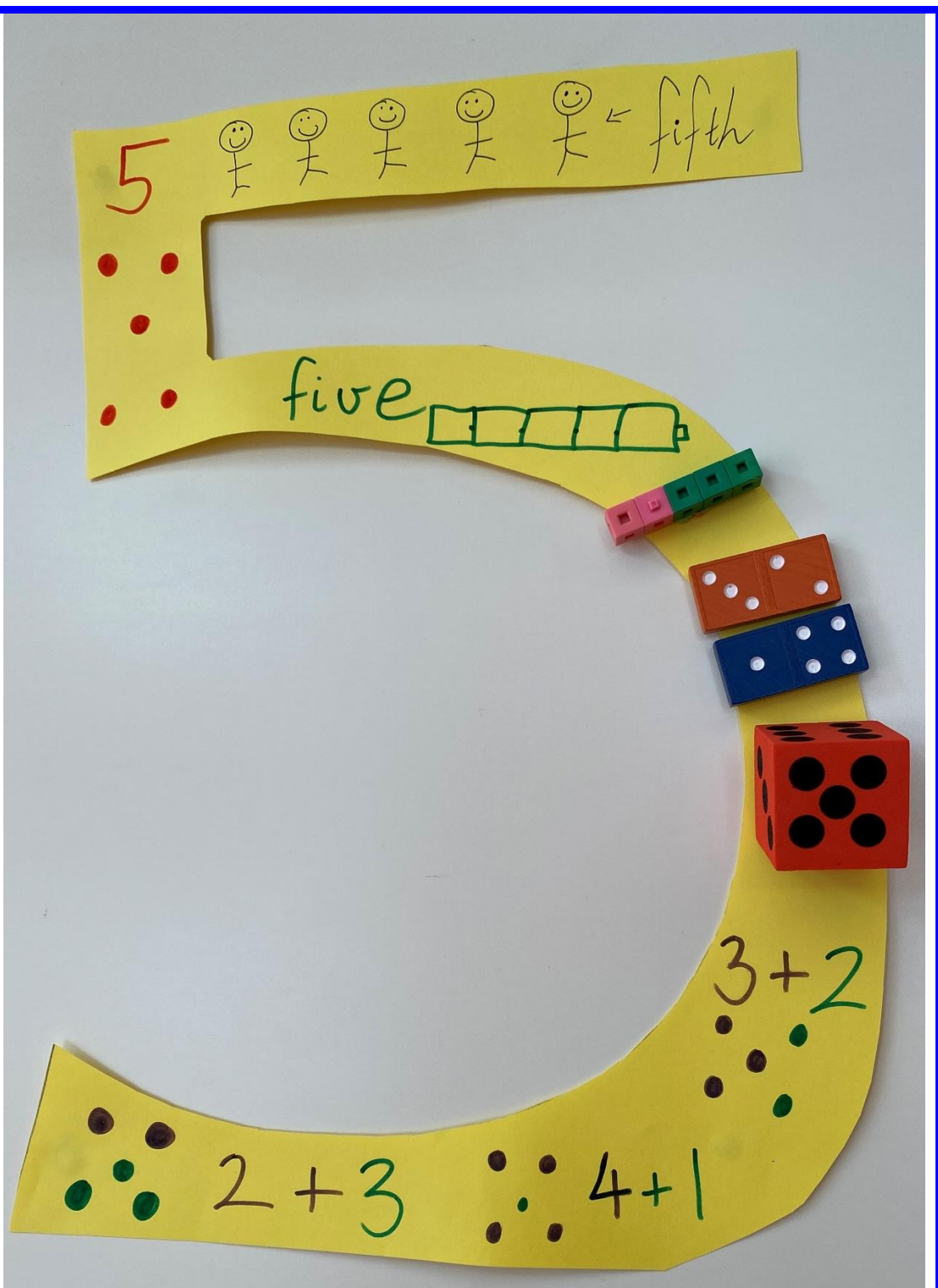
3 buttons and 3 googly eyes and 1 flower: $3 + 3 + 1 = 7$



Extension 3: Move towards 'groups of' and 'sharing' for their number sentences, for example:
2 groups of 3 buttons and 1 googly eye,
recorded as: $2 \times 3 + 1 = 7$

Extreme Extension 4: Make a fraction version using the [digit craft fractions extension](#) templates. For example, show $\frac{2}{3}$ all the ways you can:



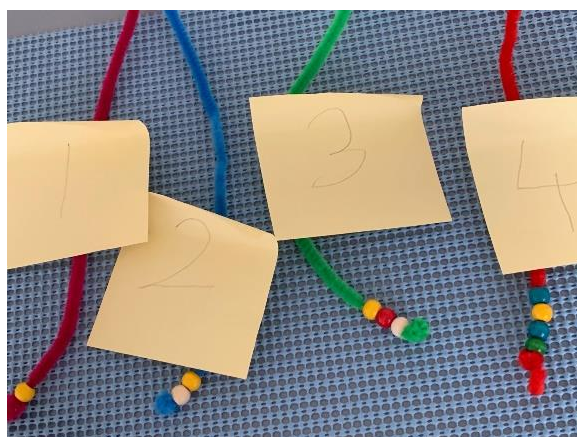


Whole-class reflection anchor chart: Make an anchor chart about the number of the day together.

Tip: If you are not a good artist (like most of us!) use materials on your anchor charts. For example, use Blu Tac to stick dice, dominoes and counters to it.

End-of-session celebration: Create a pipe cleaner with beads for each number at the end of each session. Send these home in students' home reading bags to continue to practise counting at home. More advanced students could use these to practise partitioning (addition) and subtraction. For example, push 3 beads up, 2 beads down, 3 and 2 is 5. Push 5 to the top and take 2 away (slide them off the bead slider): 5 take away 2 leaves 3.

Use the [How to Help Your Child Learn to Count](#) parent note template from this unit's folder. This note explains the purpose of these maths resources to parents and some of the home learning opportunities they could try together throughout term one:



Support student work sample



Mid-range student work sample

Use the [Ninja Slider resource](#) to continue to develop students' part-part-whole awareness, including certificates when students learn each number (all the ways to make 7) and a formative assessment record sheet for teachers. See the Ninja folder in [Addition Unit 4](#).



Montessori version of this lesson

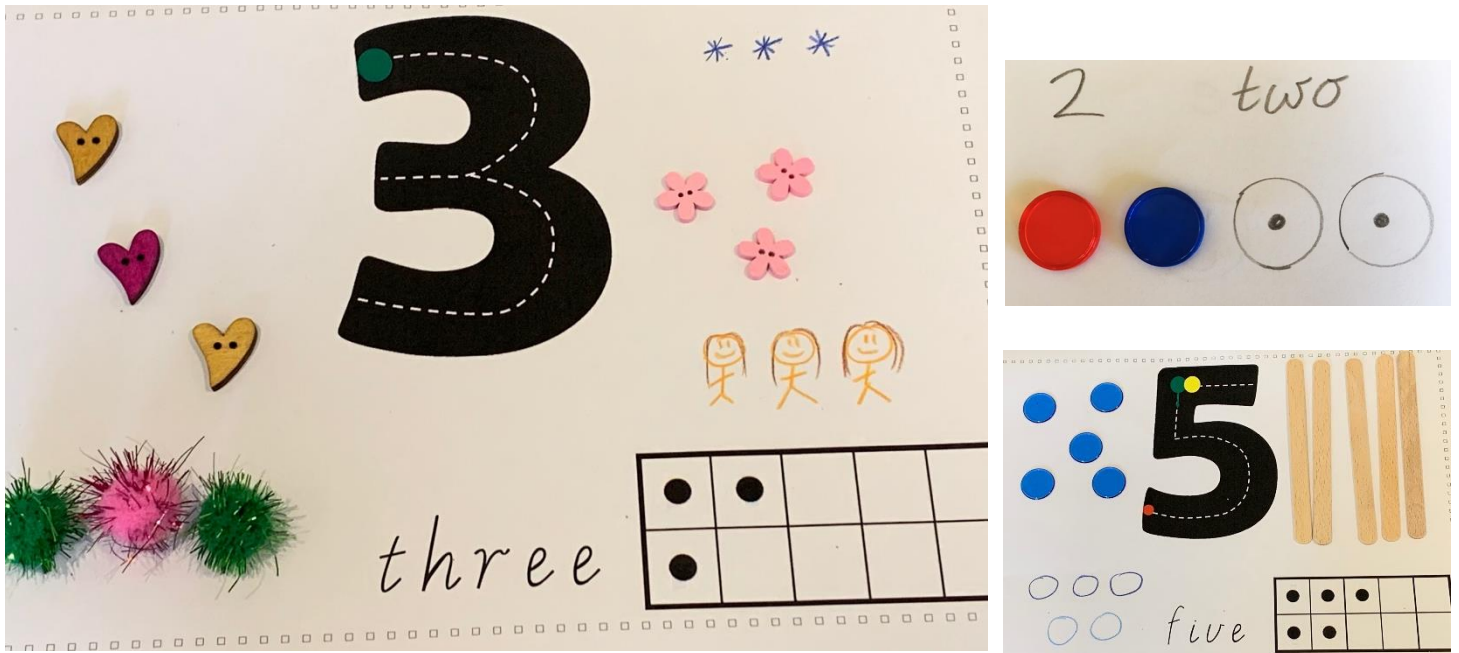
My Numbers Book

Read at home each night and buddy read in class.

After making the digit crafts each day, students can also create a page for their number book.

Templates are available in this unit's folder. Print each page on a different colour.

Each student can choose their favourite craft material for that digit and stick it onto each page on the Number Book templates from this unit's folder.



Each template contains the number in its tens frame format, as a digit road and as a word. This booklet can be taken home in students' home reader bags to reflect on each night with parents. If printed single-sided, students could also practise writing that digit on the back of each page and add other craft materials from home to show that quantity.

Also consider this number book published by another author, particularly as part of home reading for at-risk students: [teacherspayteachers.com/Product/Numbers-Books-1-20-Emergent-Readers-Interactive-2769792](https://www.teacherspayteachers.com/Product/Numbers-Books-1-20-Emergent-Readers-Interactive-2769792)

This resource contains 182 pages of basic reading sentences with matching quantity representations, with a separate booklet for each number from 1 to 20.



Counting Lesson 4

Number Art Galleries

Learning intention: Show a number many ways to see that, no matter what things you use, it is still that number

Maths vocabulary: circle/square (depending on the kinder circles/squares used), how many, count (tap and say), superhero eyes (subitise), number

Excite the students:

Who has a favourite number?

Today, you can choose your favourite number from 3 to 6, and make it all the ways you can using some awesome and fun materials!

Continue to play counting songs from unit 1 as warm-ups.

Lesson summary: Students each create multiple representations of their favourite number from 3 to 6, then roam the room to check the count of their peers. Essentially, students are creating a number art gallery. Alternatively, this session can be run as a mini-lesson each day, progressing through the numbers 3 to 6 across the week.

Materials:

- Collection of craft and maths materials, such as pom poms, popsicle sticks, googly eyes, dice, dominoes, popsicle sticks and more.
- Kinder circles or squares.
- *For extension:* Two-sided counters.

Best set-up: Fishbowl model, then students work independently.

Number 4 Art Gallery



Modelling: Model your own set of kinder circles using a number such as 4 or 5. Emphasise “tap and say” with students counting their objects by tapping them and saying the next number in the sequence.

Also emphasise arranging the number in different ways. For example, for 4, 3 pom poms on one side and 1 on the other, or 2 googly eyes on the top and 2 on the bottom. This makes it easy to use our superhero maths eyes to see the number, as well as checking with ‘touch and say’ as we count.

Ask students to choose their number before you send them back to their desks; this ensures you can ask high-mid students to go above 5 and also that there is a variety of numbers in the room, including at least 2-3 examples of each number from 3 to 6 for part 2 – the gallery walk.

Questioning - conservation:

- If I put these in this cup (use a collection that the student has made, such as three pom poms, carry around a non-transparent cup) and shake them, when I tip them back out, will there still be three? So, there are three (in a line), if I move them like this (move one from one side of the collection to the other or make the line messy), are there still three? Emphasise and show students, using the materials, that there will still be three. Allow them to experiment with this themselves, shaking the cup and shifting the materials around. This questioning tests and develops conservation.

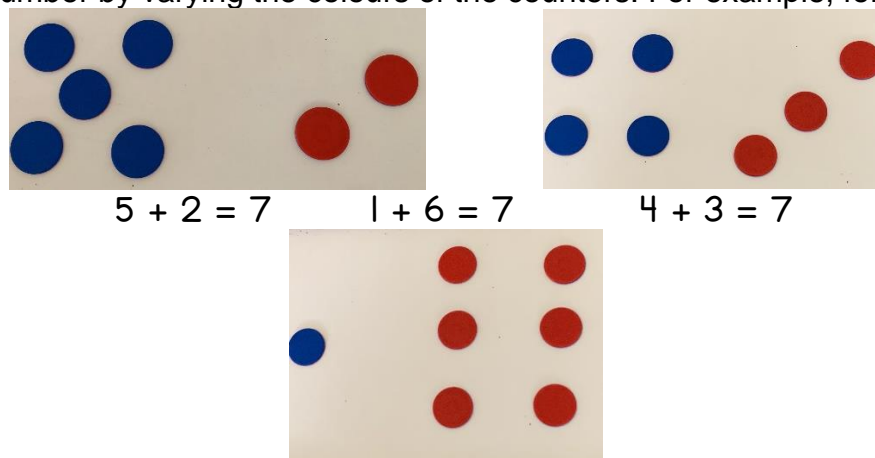
Once students finish their set – gallery walk: Roam the room and check the count of their peers. First, try to see how many there are with your superhero eyes, just seeing what the number is without counting. Then check using the ‘touch and say’ strategy to count as you say each number.

Midway through whole-class questioning:

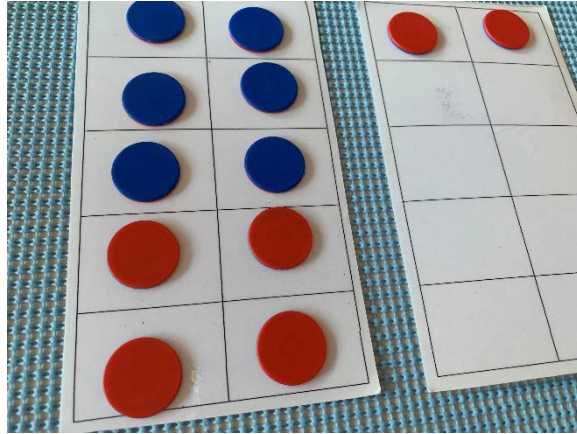
- Put one extra item in each of your circles, what number do you have now?
- Change it back to the first number you made. Now take one away from each circle. What number do you have now?

Support: Allocate these students one number just above their maximum counting range, such as 2, 3 or 4. Make one sample with them so they can visualise the number they need to make. Go to these students once they have a few set up and practise ‘touch and say’ counting using all the examples in front of them that they have made themselves.

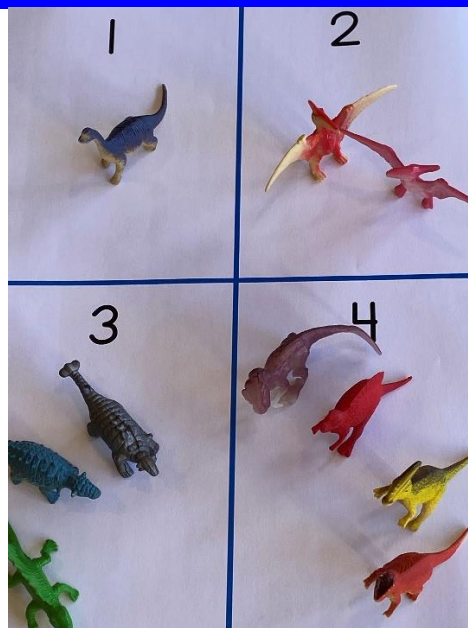
Extension 1: Use two-sided counters to figure out all the ways to make their number by varying the colours of the counters. For example, for 7:



Extension 2: Use two ten frames and two-sided counters. Start with 12 as 1 full ten (all red) and 2 extra (blue). Then figure out all the other ways to make 12 by flipping the counters to change the composition of red compared to blue.



Use matching colours for the [extension and is recording templates](#) from this unit's folder. Repeat for 13 and all the teen numbers.



Formative assessment: Give each student a [1-4 mat](#) with just the digits written. Template is in this unit's folder – [formative assessment 1 to 4](#).

- Can the student match the digit to its quantity by putting the correct number of objects in each square?
- Can the student say the word for each digit? Can they try to write it as a word?
- Can the student count the total of each square with 1-to-1 correspondence and can they confidently tell you how many is in each straight after counting – How many are there (cardinality)?
- If you cut out the squares and mix up their order, can the student place them back in order, with 1 on the left-hand side?
- Can the student tell you what the next square would be?

Counting Lesson 5

Memory Game – Digit Version

Learning intention: Match each digit to a picture of that number of things

Maths vocabulary: count (tap and say), digit, tally, square

Real-life link:

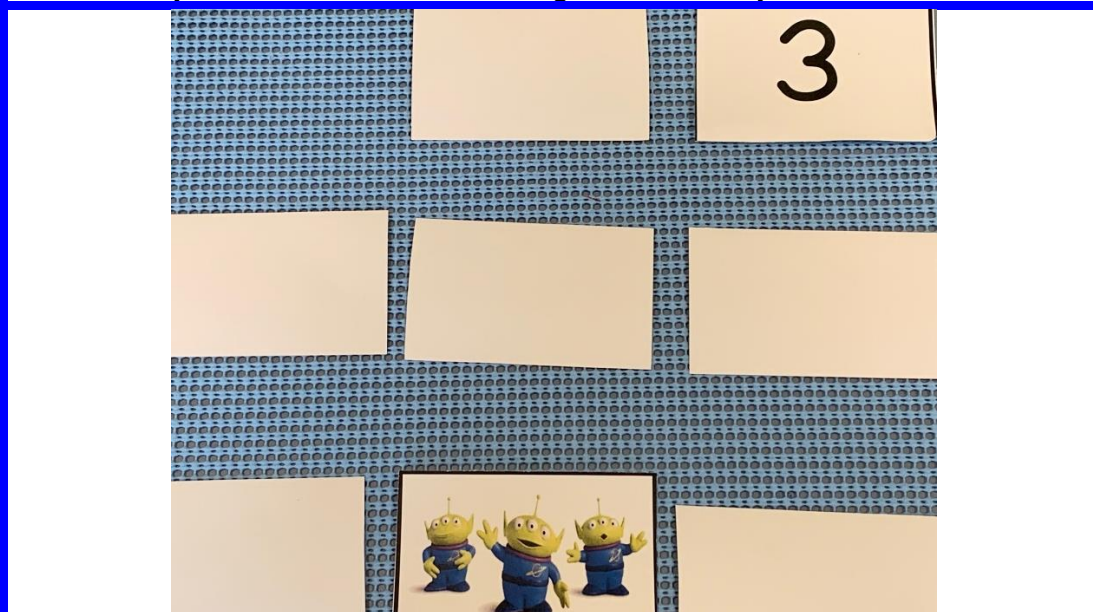
Which animal do you think has the best memory?
Which animal do you think has the worst memory?
Discuss the memory spans of different animals by reading some snippets from this article to the class:
animalsaroundtheglobe.com/animals-with-the-worst-memory/

Lesson summary: Students play a digit-to-quantity memory game according to their current points-of-need with a like-ability partner.

Materials:

- [Memory matching card](#) templates from this unit's folder. These are a progressive set with engaging pictures including Lego and cartoon characters. The cards start with just 1 and 2, then progress up to 7. Allocate to students in like-ability pairs based on their points-of-need.
- Pre-slice each set into squares. Print each page on different coloured paper so that the sets are easy to collect or store in envelopes to reuse throughout the year, as well as to send home for further practice with parents.

Best set-up: Fishbowl model, then regular like-ability maths buddies.



Modelling: Model the game of memory, placing all the cards face down and with each player having a turn to try to find a picture card that matches a digit card. Students cannot match a picture with a picture (for example, 2 pigs with 2 love hearts), a picture must match a digit since they are pairs – both show 2 and mean the same thing.

Emphasise “tap and say” with students counting their objects by tapping them and saying the next number in the sequence. Try to look at each picture or digit and burn it into your memory, stare at it to try to remember it like an elephant – not like a fish! This is good working memory practice for all students, but particularly for support students. The person with the most pairs, after all cards have been picked up, wins that game. If you have the same number of pairs as your partner, the next game is worth double points.

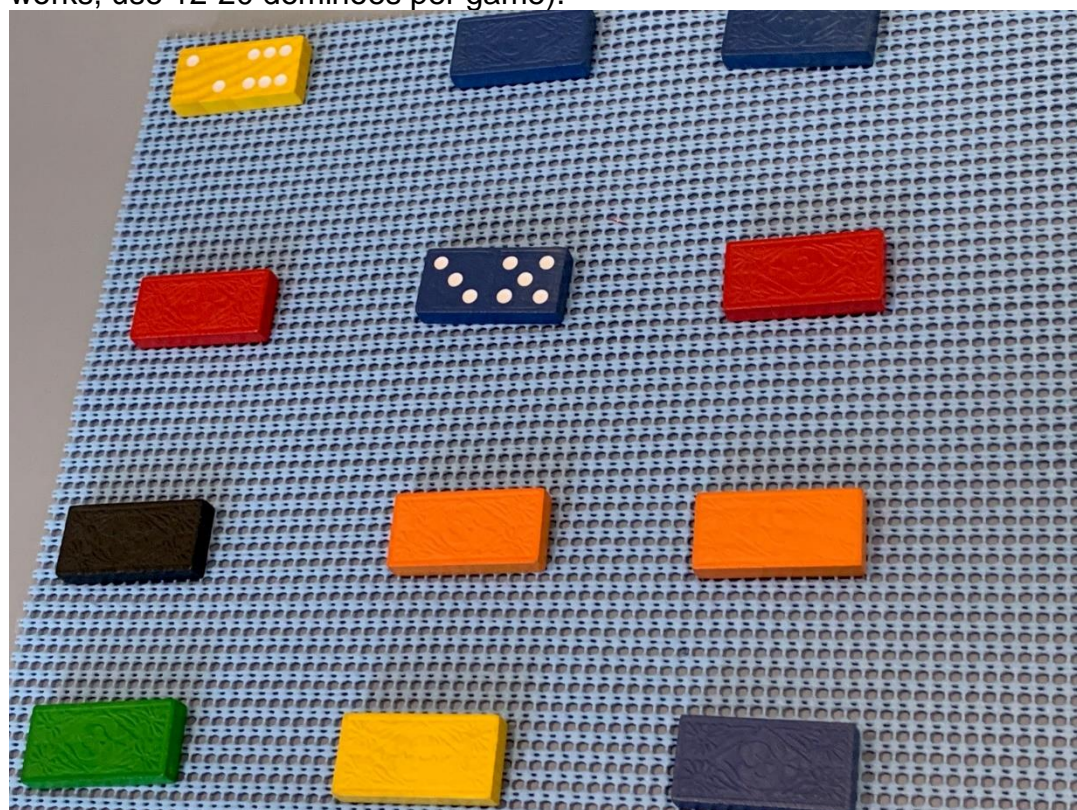
Teacher roaming: Check each student's pairs are matches as they play, as this provides a good indication of their ability to match digits to quantities.

Cross-content link – tallying: Students could keep track of their points using tally marks on a square post-it note.

Cross-content link – 2D shape vocabulary: Emphasise the vocabulary 'square' throughout this session.

Support/Extension: Use the set that is most suitable for their point-of-need in like-ability pairs. The [templates](#) start with only 1-3 for support.

Extension 2: Use face-down dominoes, which brings in the concept of addition. Find two dominoes that make the same total. The teacher or extension students will need to pre-organise about 20-30 dominoes in total (each with a matching partner that has the same total to ensure the game works, use 12-20 dominoes per game).



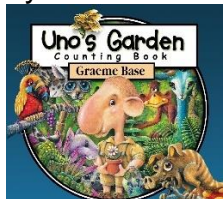
Counting Lesson 6

Quantity-Digit-Word Frames

Learning intention: Count as high as you can using 'touch and say'

Maths vocabulary: count (slide and say), how many, digit, word

Literacy Link
– Numeracy
Picture Book:
Read *Uno's*
Counting Book
by G. Base.



This book shows numbers using a wide range of animals, showing the digit and ten-frame representation of each number on a decent-sized fold out for each page.

Excite the students:

Today, we are having a counting contest! Give students a mini scoresheet (post-it note) and say you will tally a point for each count they complete.

Lesson summary: Students count objects using the supportive templates in this unit's folder. These templates show students the connection between the quantity, the digit and the written word.

Materials: [Counting frames](#) with identical sized boxes if preferred.

- [Counting frames set 1](#) and [set 2](#) from this unit's folder.
- For counting frames [set 1](#): Wide range of different objects that students can count as they add them to the dots or frames on the supportive templates – beads, dinosaur counters, teddy bear counters, pom poms, and so on.
- For counting frames [set 2](#): Teddy bear counters, whiteboard markers and magnetic letters.

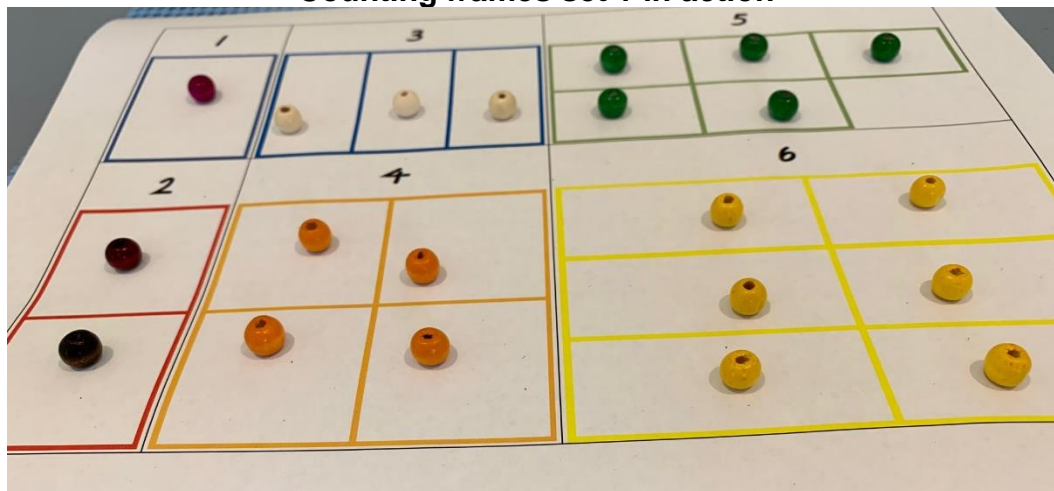
Best set up: Fishbowl model, then students work independently.

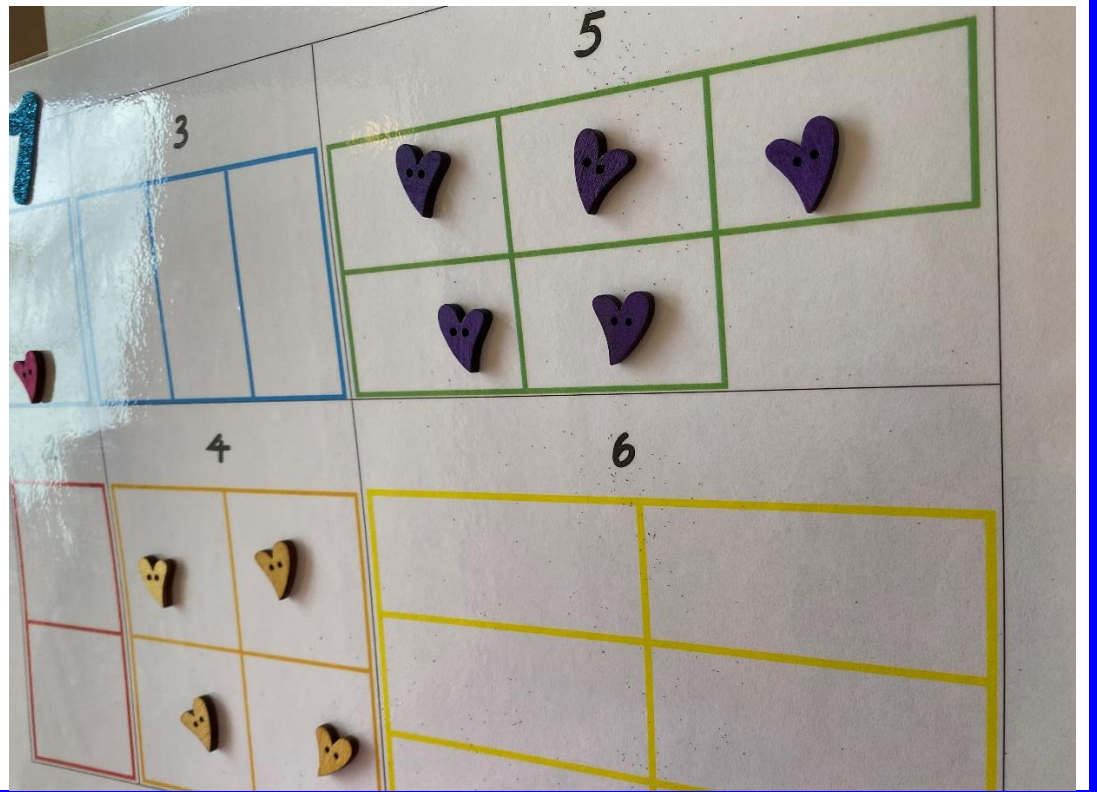
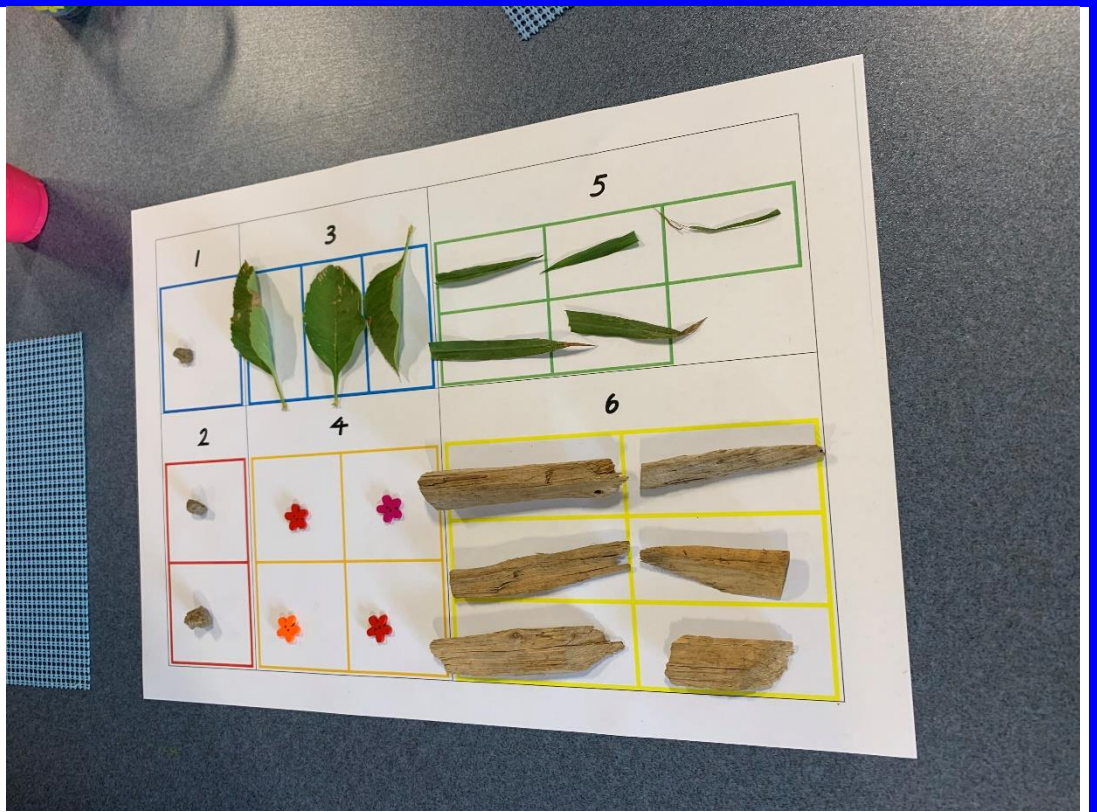
Modelling: Model using one object at a time. Add the objects to each square as you count using "slide and say," then point to the digit and say it – "one." Point to the word and say it again, "1." Repeat for each box in the frame. Then raise your hand, show your teacher (who will ask you to repeat one box then tally a point on your scoresheet). Repeat with a new set of objects – googly eyes instead of pom poms this time!

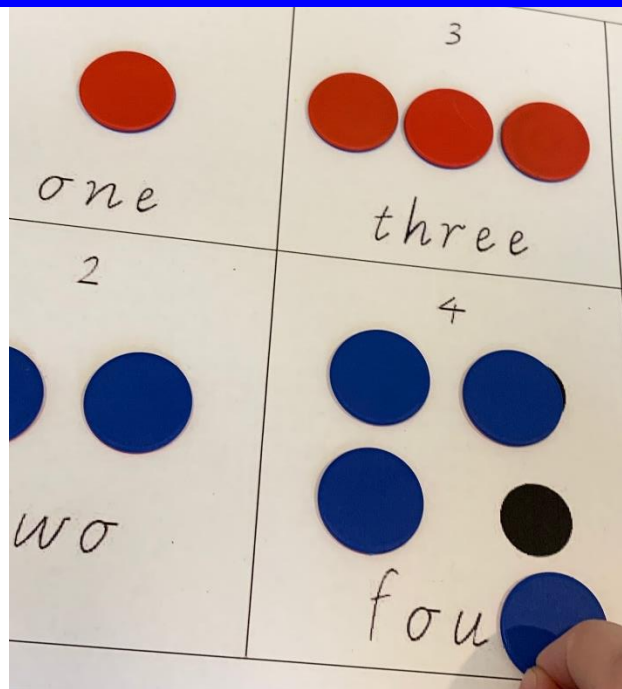
Questioning:

- How many are in this box? Show me how you counted it. Look for students touching each object as they say each number. Avoid students moving either their mouth or finger too fast, such that their words and fingers do not count in sync. Your finger and mouth are a team!
- What is one more than five? What is one less than five?

Counting frames set 1 in action

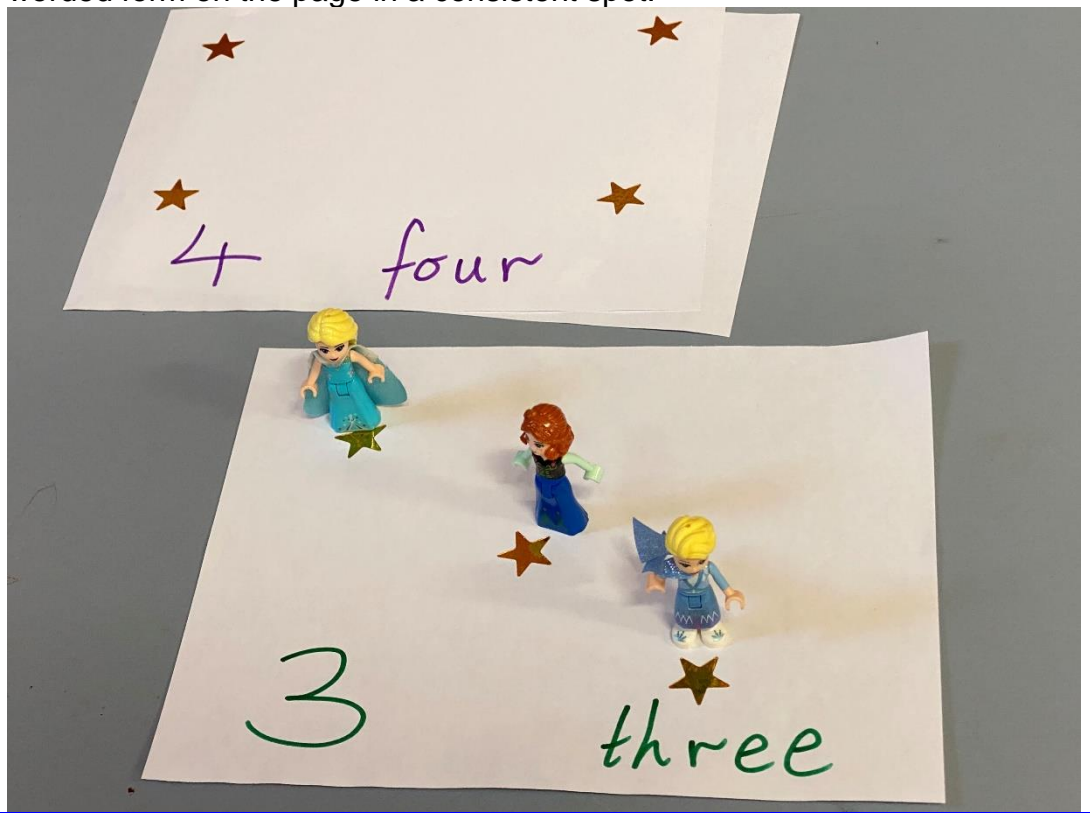






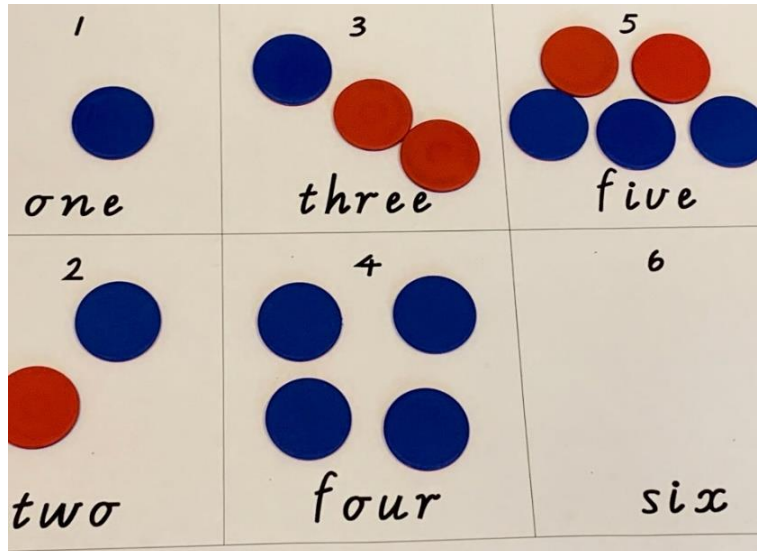
Counting frames set 2 in action

Support 1: Make pages with sticker dots, or large dots created using markers, that show only one number on each page. Write the digit and worded form on the page in a consistent spot:



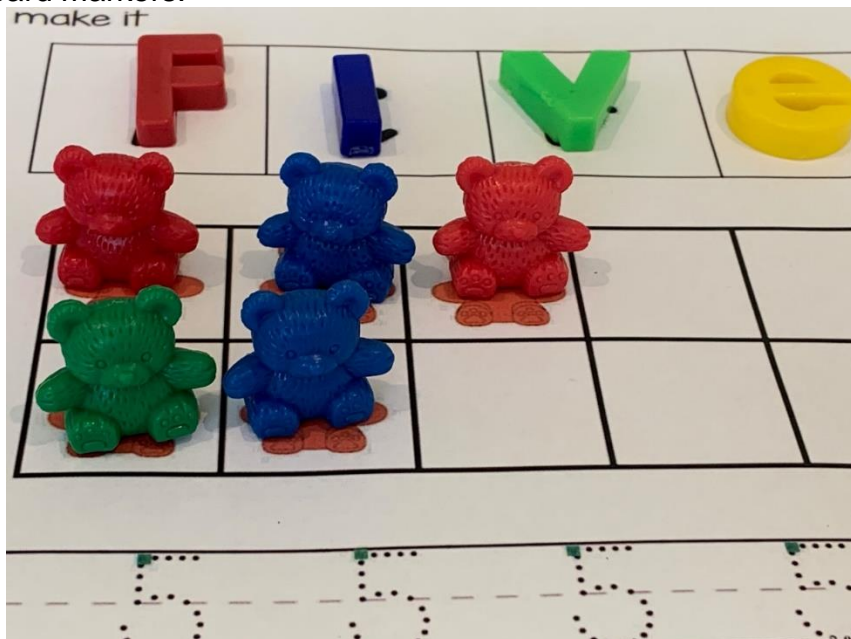
Support 2: Use the most supportive template on **page one** of [set 1](#) and also the 1-5 pages from set 2 (one dot or teddy bear outline per object so that students know to stop when they run out of dots).

Extension: Use the least supportive templates on **page three** of [set 1](#) (no dots). Arrange the objects so that they are easy to see and write a matching addition and subtraction sentence for each square. For example, $2 + 3 = 5$ and $5 - 2 = 3$, as you can see from the way the 5 has been arranged in this set:



Offer a bonus point if these students can tell you one very impressive thing that they notice after completing each count. For example, "I can see that 5 is one less than 6, 5 is 2 more than 3. 6 is double 3, and 3 is half of 6."

Variation – Counting frames [set 2](#): Laminate for students to use with whiteboard markers.



Counting Lesson 7

Race to 5

Learning intention: Count to 5 and record the digit and word for each number that your character lands on

Maths vocabulary: count (move and say), digit, word

YouTube clip:
Compilation of unusual animal races:
[youtube.com/watch?v=OPI-sCkHuhE](https://www.youtube.com/watch?v=OPI-sCkHuhE)

Continue to play counting songs from unit 1 as warm-ups.

Lesson summary: Students race to 5, recording each number they land on with their character, as a digit and word, with the assistance of the supportive gameboard.

Materials:

- 3-dot die – 1 per pair.
- [Race to 5 gameboard](#) – 1 per pair.
- [Race to 5 recording sheet](#) – 1 per student.
- Figurines or any type of counter as their characters.

Best set up: Students race against their regular like-ability maths partner.

Lesson in action



Modelling: Emphasise “move and say” as the counting strategy for this lesson. As your character moves forward and touches a square, say that number. The board will tell you which number to say. For example, if your character is on ‘2’ and you roll ‘2,’ move them forward one square at a time, saying “3” and “4.” Then record four on your recording sheet, colouring in that number of spots and writing the matching digit and word. This is the digit for 4 and this is the word for four – point to each many times throughout your fishbowl modelling to emphasise this vocabulary.

Partners – watch your opponent carefully! If they do not record after each turn, they need to go back to zero!

Rules of the game: You do not need to reach ‘exactly’ 5, if you go over it, you win. This is why it is important for students to use 3-dot dice instead of 6-sided dice, where one roll could win the game. If 3-dot dice are not available, use a post-it note cup with scrunched up pieces of paper that students jiggle around and that have ‘1’ and ‘2’ written on them.

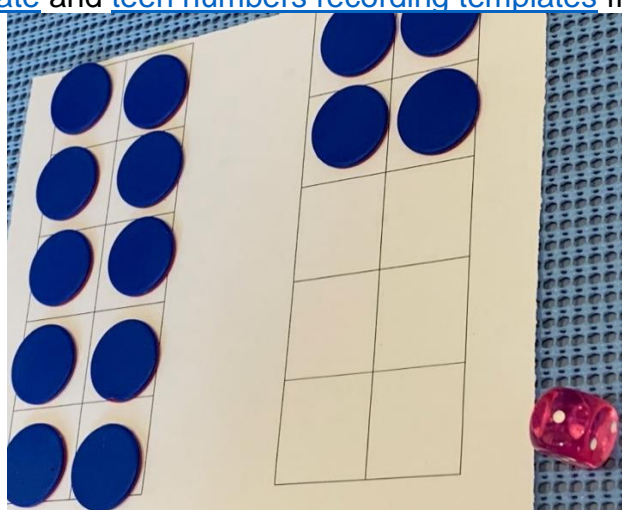
Questioning:

- What number are you on? What is one more? What is one less?

Support: If needed, slice off the template at 3, particularly if these students are still learning to count to 3 and do not confidently and fluently know the digits for 1, 2 and 3. This will keep the games short and sharp, so they can tally a point for each contest and aim to be the first to win 3 whole games.

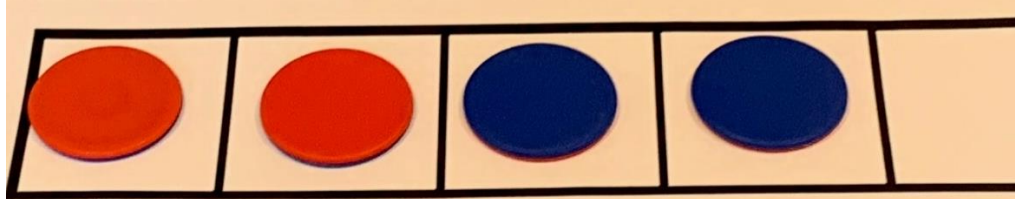
Extension 1: Use red pencil, beside the standard recording, to also write how many more they have to go until they win the race.

Extension 2: Use two ten frames and race to 20, [recording](#) the number in digits and words each time. Fill their tens frames with counters according to the number they rolled and keep a running total. Stand the ten frames vertically and fill from left-to-right so that the frames match the appearance of the digits of each teen number they create. Use the [barrier game teen numbers template](#) and [teen numbers recording templates](#) from Unit 13.

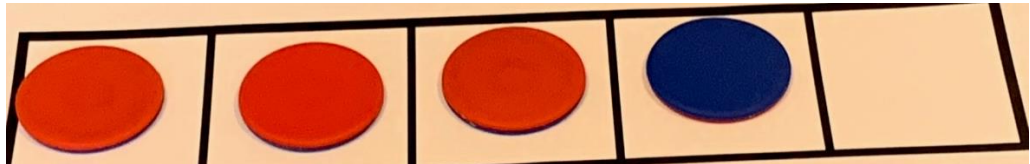


For spelling support, use the [extension – number spelling chart](#) from this unit's folder. Emphasise that 'ten and some more' makes the teen numbers, which is shown by two ten frames when their first ten frame is filled. Teach these students that teen stands for ten, so fourteen is 'four and one full ten.'

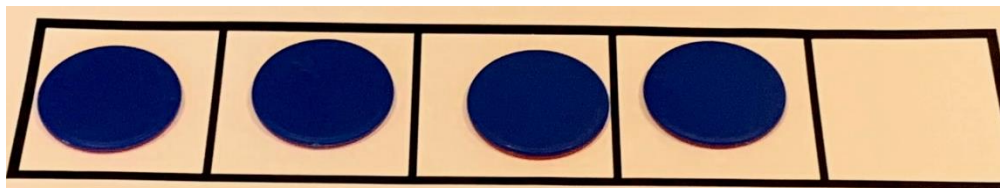
Variation: Students now work as a team. Student A creates a [five-frame](#) with any number of counters using the regular [five frame templates](#) from this unit's folder. Student B then opens their eyes and says not only the number they see, but also what they notice. For example, for 4:



"I see 2 and 2 is 4."

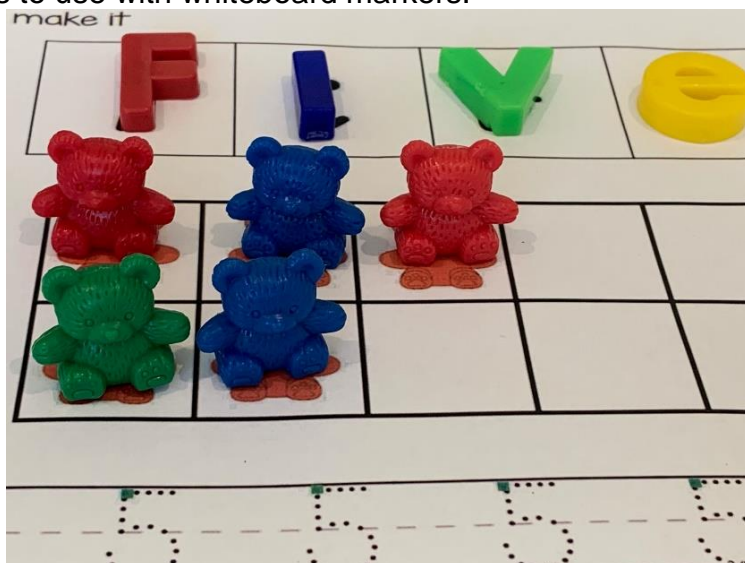


"I see 3 and 1 is 4."



"I see 4, 1 is missing from 5, 1 more is 5."

End-of-session continued practice – Counting frames [set 2](#): Laminate for students to use with whiteboard markers.



Reflection – Giant whole-class version: Race to 20 using yourselves as the figurines/characters. Roll giant 6-sided foam dice. Support students can just focus on moving the correct number of spaces. Extension students can be their partners, figuring out their current position in the race (ordinal number) and their recording their landing spot in words and digits, despite that the racetrack does not have these written down.



Emphasise the ordinal number language as a class, pausing after each roll to ask the class the current position of each racer – Bertha is first, Bert is second, Bart is third, Barbara is fourth, Ben is fifth!

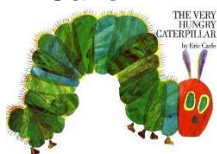
Counting Lesson 8

Caterpillar and Lego 'Peek-a-Boo' and 'Bingo' Games

Learning intention: Write the word and digit for each number up to 5

Maths vocabulary: count (tap and say), word, digit

Literacy Link – Numeracy Picture Book: Read *The Very Hungry Caterpillar* by E. Carle.



Lesson summary: Students count, then play bingo using pom poms and Lego in supportive templates, focusing on consolidating the matching word and digit for each number throughout this session.

Materials:

- 6-sided die.
- [Recording template.](#)
- [Caterpillar mat template](#) with pom poms. For part 1, one per pair. For part 2, one per student.

OR

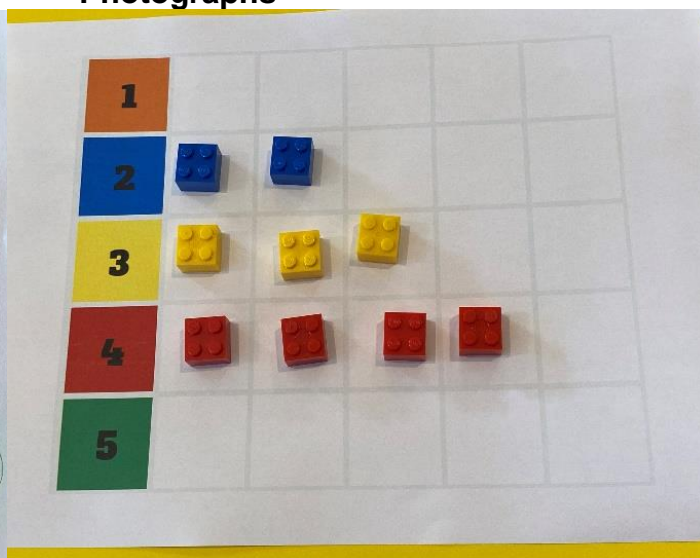
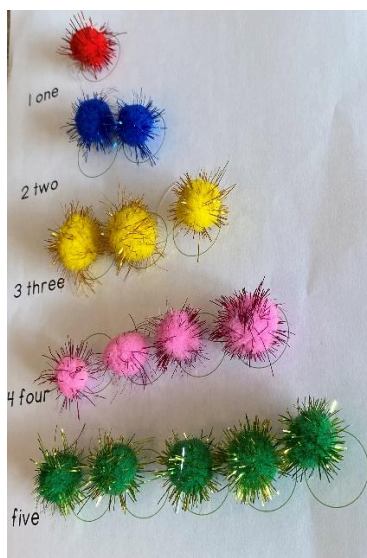
- [Lego mat template](#) with Lego pieces or cubes to act as Lego. For part 1, one per pair. For part 2, one per student.
- *For support:* [Caterpillar support counting mat](#) with Play-Doh.

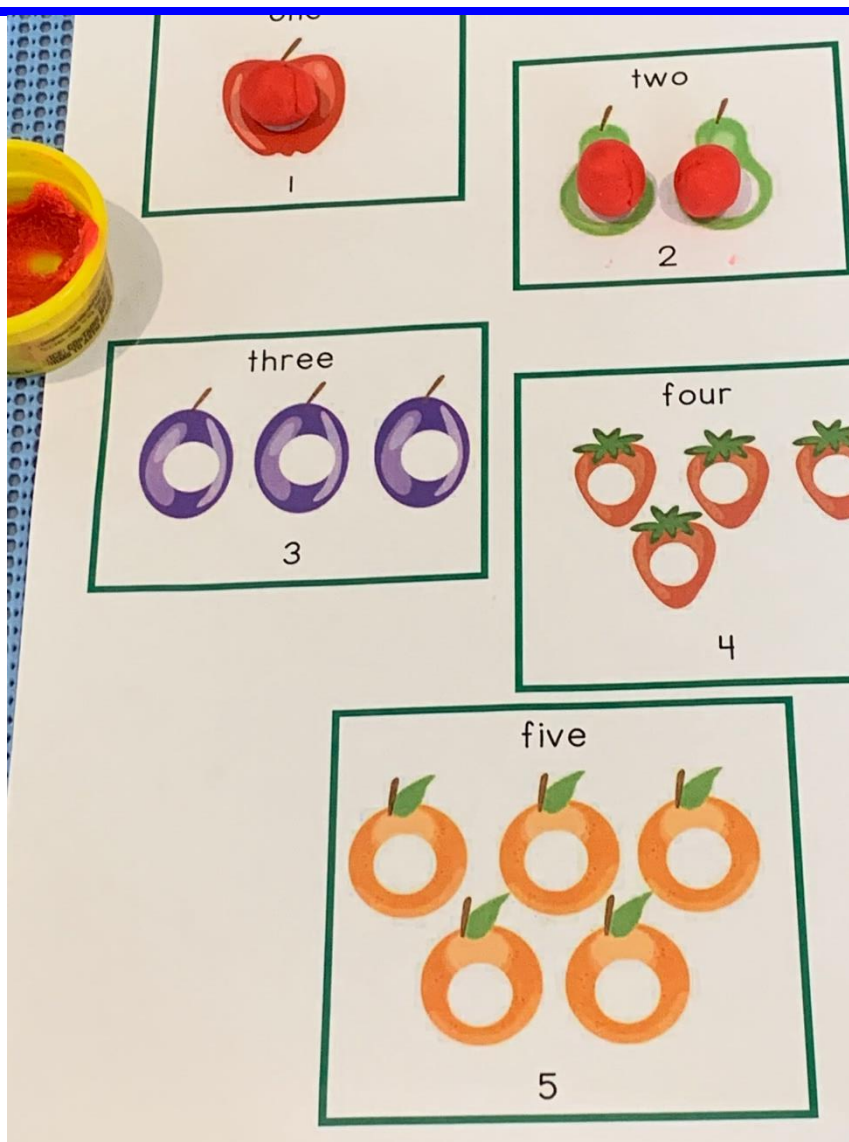
Best set-up: Fishbowl model, then regular like-ability maths buddies.

Modelling – Part 1 – Peek-a-Boo: Player A makes a caterpillar or row of Lego in the template, while their partner has their eyes closed. This must be made in the correct spot in the template. Player A says, “Who am I?” Player B opens their eyes and writes down the digit and word for that number on the [recording](#) template. Emphasise ‘touch and say’ counting, with students tapping each item as they say the next number in the sequence. Partner A ticks their partner’s work if they agree.

Part 2 – Bingo: The first player to fill their entire counting mat wins! Students roll the 6-sided die and aim to achieve a ‘bingo’/complete [caterpillar](#) or ‘bingo’ [Lego mat](#) before their partner. If they roll a number they have already built, or if they roll 6, they miss a turn.

Photographs





Support 1: Use the [caterpillar support counting mat](#) from this unit's folder with fruit counters or Play-Doh to fill the gaps in the holes.

Support 2: There are also free downloadable caterpillar templates for counting with one-to-one correspondence here powerfulmothering.com/wp-content/uploads/2014/10/counting-caterpillar-busy-bag-printable.pdf:



Support 3: Cut off the templates at the number 3 if needed.

Extension 1: Do not make the caterpillars or Lego on the supportive templates – just use a plain piece of paper as their mat and see if students can still record the numbers in words and digits.

Extension 2: Use two ten frames and the [extension spelling assistance](#) template to make any number from 1 to 20 for their partner to solve.

Reflection: Reread *The Very Hungry Caterpillar* as students make their own 5 caterpillar with pom poms along a popsicle stick, adding a pompom on each page (making their caterpillar a 4 pompom caterpillar when you read the 4 plums page). Students can then take these home to practise counting to 5 with their parents.

Also practise the days of the week using the caterpillars. For example, point to the first pompom and say, “Monday,” then the second saying, “Tuesday,” and so on, with seven pompoms in total in each caterpillar.



Make a caterpillar in a very visible spot near your classroom, using just balloons, the next day. Ask students to count the caterpillar as it grows each day for more incidental counting practice:



Counting Lesson 9

Bingo Number/Digit/Word Towers

Learning intention: Count to 6 and record the digit and word for numbers up to 6
Maths vocabulary: count (build and say), digit, word, one more/next, one less/before

Games-based

hook: Play an interactive game of bingo using this link: abcya.com/games/number-bingo

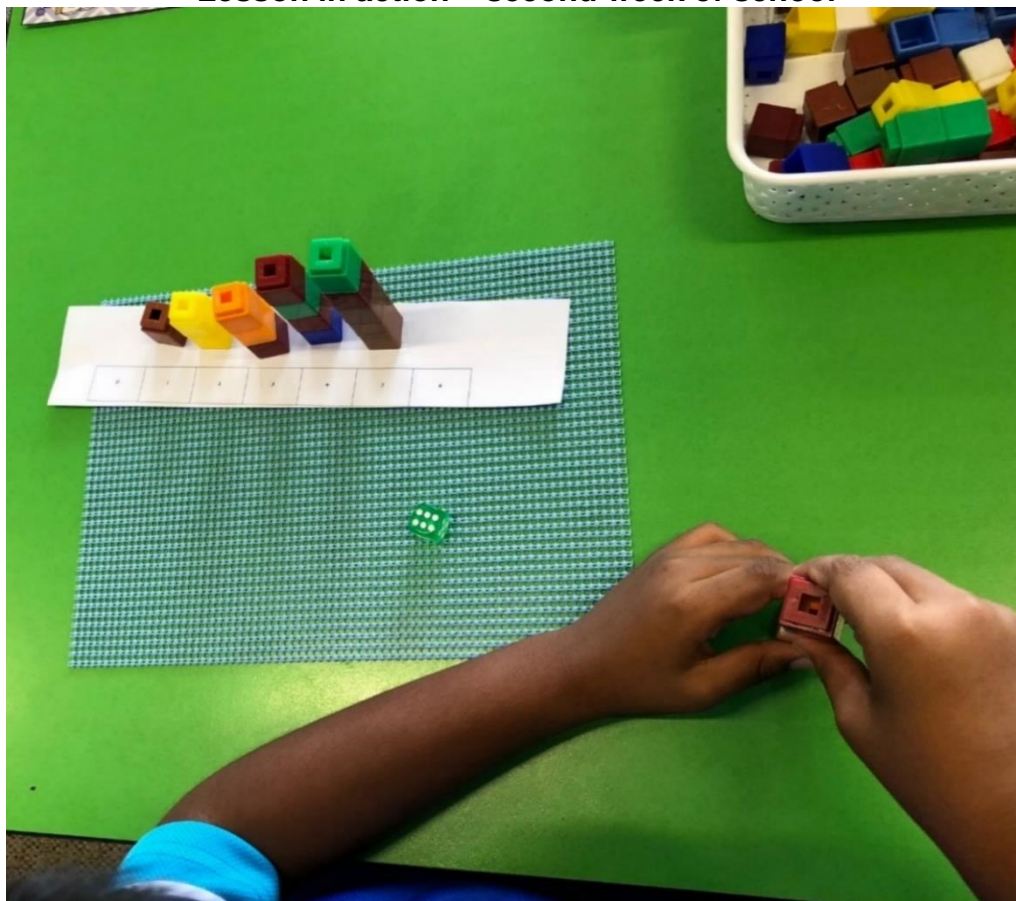
Lesson summary: Students use the bingo templates to build towers according to what number they roll on their 6-sided die. Students aim to roll and build all their towers before their partner to achieve BINGO!

Materials:

- [Bingo templates](#) from this unit's folder – 1 per student, pre-sliced. Print both the digit and word versions so that students can swap to words when digits are too easy.
- Connectable cubes.
- 6-sided die.

Best set-up: Fishbowl model, then regular like-ability maths buddies.

Lesson in action – second week of school



Modelling: Model the game versing a student partner at a desk. Always keep zero on the left (left-to-right, just like how we read). Roll the die and model collecting that number of cubes – one cube per dot on the die. Emphasise “build and say” with students counting their cubes as they add to their tower, saying next number in the sequence as the cube connects. Model placing the tower on top of its matching digit and then recounting to double-check using “tap and say.”

Rule 1: If you already have a tower and you roll that number again, you miss a turn – bad luck!

Rule 2: Emphasise the rule that if the tower is incorrect once you place it on your bingo mat, your partner (who then checks your count) can remove it completely and you, in effect, lose that turn.

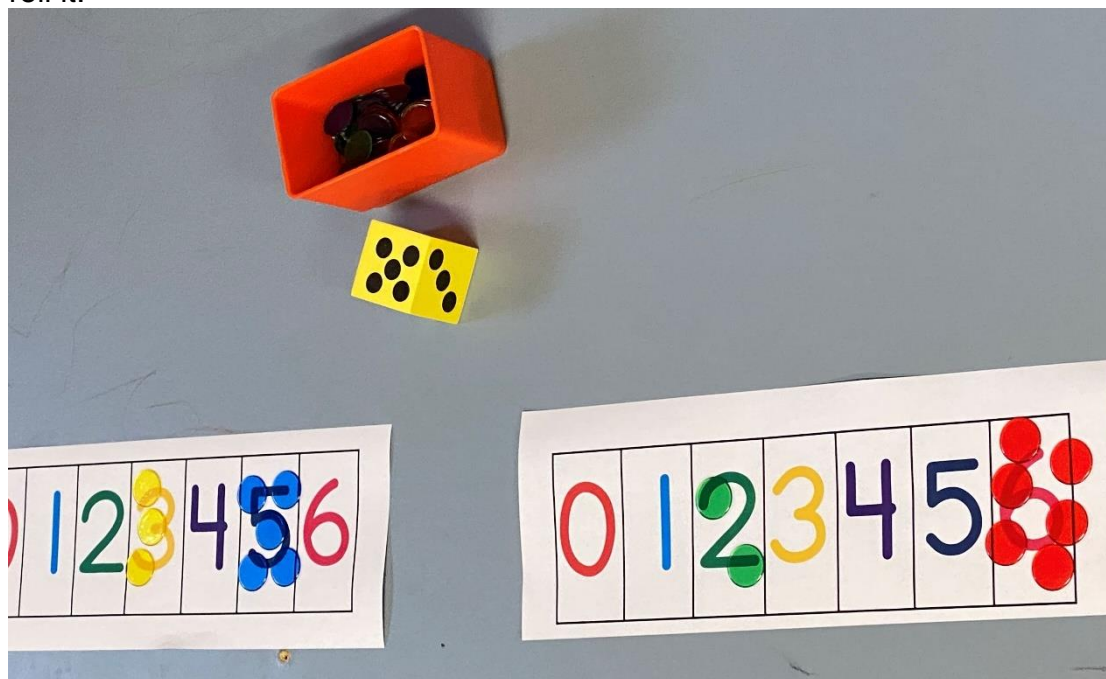
Midway variation: For pairs that are doing well, change the template from the digit version to the [worded version](#) on the second page, building the correct number on top of its matching word:

zero	one	two	three	four	five	six
------	-----	-----	-------	------	------	-----

Questioning:

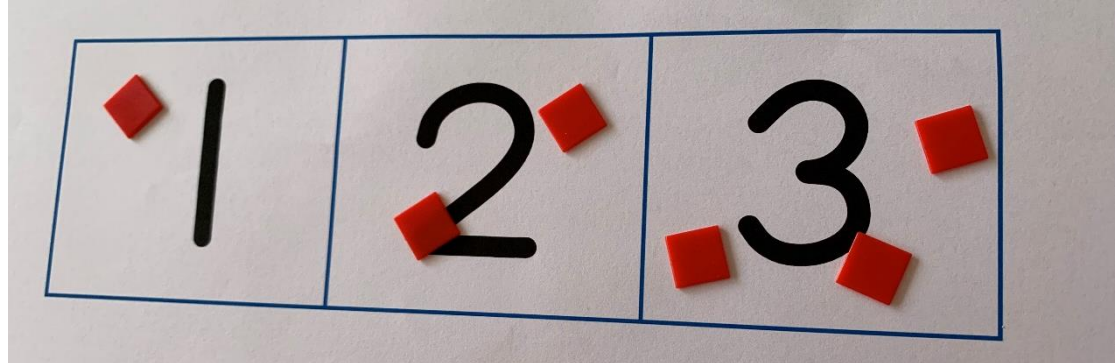
- How many blocks would there be if I put one more on top? So, what number comes after 3? What number comes next?
- How many blocks would you have if I took one away? So, what number comes just before 3?
- How many blocks do you need to put in this box (pointing to zero)?

Variation: Cover each digit with its matching number of counters when you roll it:

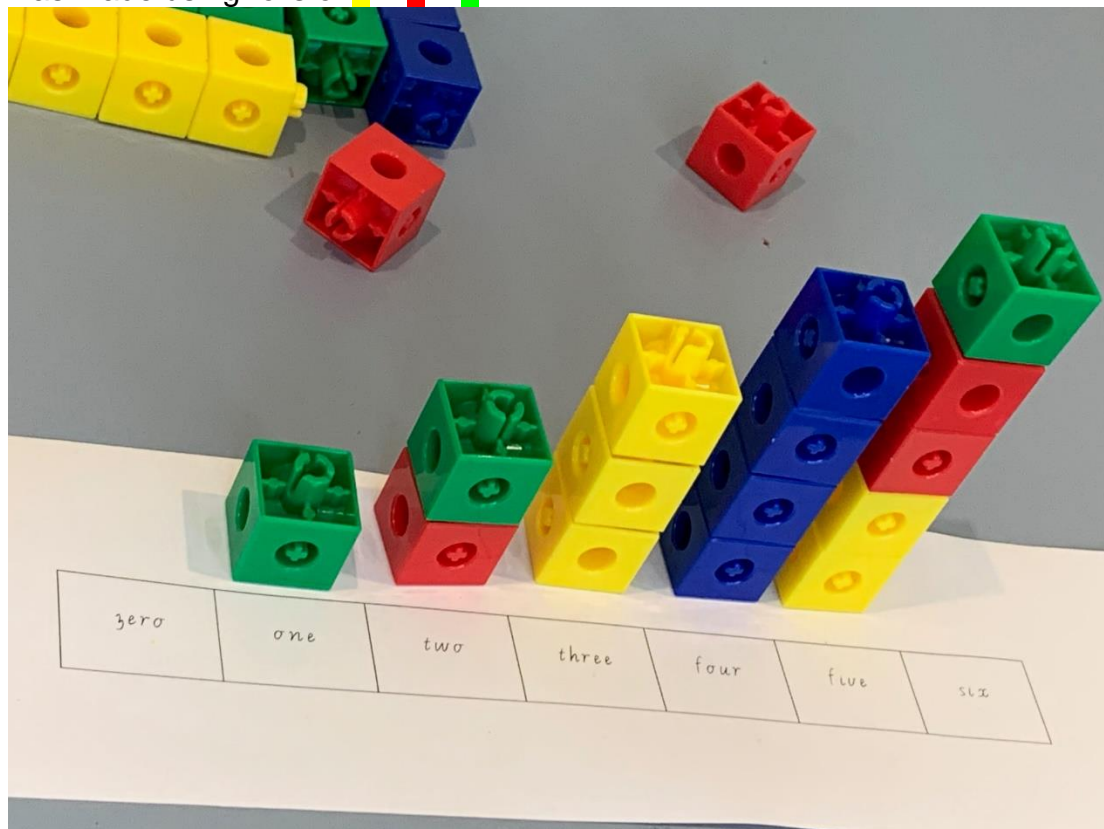


[Bingo – counters version](#) templates are in this unit's folder, with larger spacing to allow the counters to be placed inside each box.

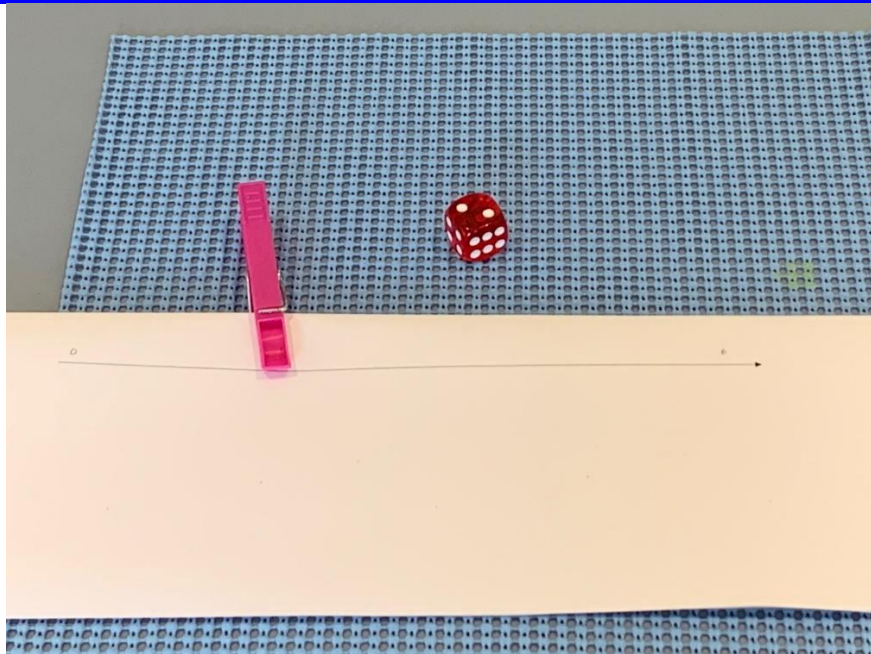
Support: Use the [bingo support](#) template and a 3-dot dice if available. If 3-dot dice are not available, use a cup with post-it notes scrunched up that have 1 dot, 2 dots and 3 dots drawn on them.



Extension: Allow partitioning to score their towers. For example, if you roll 4, but you have already finished your 4 space, put 4 on the '5' space to start building 5, hoping to roll another 1. Build the tower in different colours to show how you made it using more than one roll, for example, 5 (in the photo here) was made using rolls of $2 + 2 + 1$:



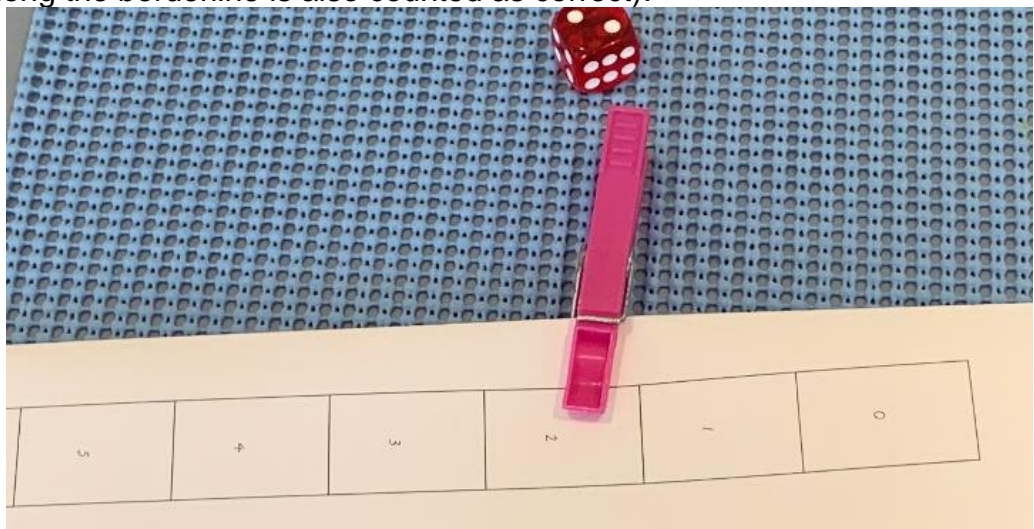
Extension 2: Students roll two dice and use addition and subtraction number sentences to score their spaces. For example, if I roll 4 and 2, but I already have 6 (addition) covered, I could use subtraction $4 - 2 = 2$ to make a bingo tower of 2 and earn that space. Write the equation you used below each number. For extension students, you could require that each number needs to be scored/earned three times (with three equations each) for victory.



Variation – number line version: Ask students if they have ever played ‘Pin the tail on the donkey’ at a friend’s party. Well, now you can play the maths version of pin the tail on the donkey. Use the [bingo – pin the tail on the donkey version](#) templates. Fold the page in half, so that at first students can only see the blank line, then can flip the page over for feedback to see the filled in number boxes.

Roll the 6-sided die, for example, ‘2.’ Use a peg to try to pin where 2 would go on the 0 to 6 number line. What would be at the halfway mark? Is 2 less than half or more than half?

Then your partner can turn over the page and show you where your peg landed. Score a point if you put your peg anywhere in the correct number box (along the borderline is also counted as correct):



Follow-on session: Play the [bingo 0 to 10 version](#) (page 3) of the same game. Templates with both digits, words and the *pin the tail on the donkey* version 0-10 version are in this unit's folder. For these templates, either enlarge to A3 so the larger connectable cubes can fit, or alternatively use small connectable cubes/place value ones blocks (1cm³), which are good for students' finer motor skills.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

zero	one	two	three	four	five	six	seven	eight	nine	ten
------	-----	-----	-------	------	------	-----	-------	-------	------	-----

Counting Series of Lessons 10

Counting songs: Play counting songs from unit 1, or these:
[youtube.com/watch?v=DR-cfDsHCGA](https://www.youtube.com/watch?v=DR-cfDsHCGA)
 and
[youtube.com/watch?v=Yt8GFqxllTs](https://www.youtube.com/watch?v=Yt8GFqxllTs).

For set 4: Play this Cookie Monster clip
[youtube.com/watch?v=mQE0LQFFn3s](https://www.youtube.com/watch?v=mQE0LQFFn3s)

For set 5: Bring in a watermelon and share some slices with the class.

Counting Mats – Progressive Series of Lessons

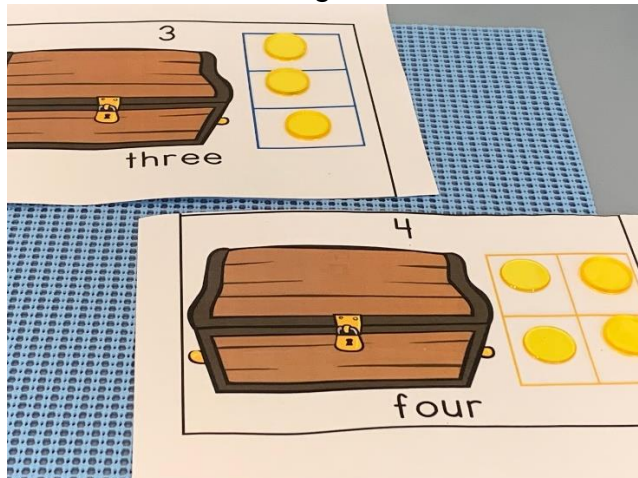
Learning intention: Count as high as you can using ‘tap and say,’ also matching the words and digits for each number of things
Maths vocabulary: count (touch and say), how many, digit, word

Lesson summary: Students use counters or pompoms to create the correct number of objects across a range of different counting mats. The mats include supportive prompts that progressively increase the maximum range of the count and continue to match quantities to the digits and words.

All templates are in the subfolder – [Counting Mats](#): Counting mat 2



Counting mat 3



Counting mat 4



Materials: Counting mat templates from this unit's folder:

Set 1 – Counting to 4: A selection of counting mat templates. These ensure you can easily pick up any inaccuracies as the counting mat will not be tipped out after each count and so these are ideal for formative assessment at the start of this series of lessons.

Set 2 – Teddy bears: 1 to 4 teddy bear counting mats. These can be laminated for students to write the matching digit and words for each quantity in the spaces provided.

Set 3 – Treasure chests: 1 to 6 treasure chest counting mats. Use with Australian one dollar coins. There is a supportive version with frames and a less supported version without frames for the quantities.

Set 4 - Cookies: 1 to 8 cookie trays. Use with counters or Play-Doh.

Set 5 – Watermelon seeds: 1 to 10 watermelon seed counting mats.

Best set-up: Set up different sets on group desks around the room. Students rotate to complete each set, making the session more workable and fast-paced by minimising printing and set-up so that you only need 5 of each set (rather than full class sets).

Modelling: Emphasise for students to whisper count as they work, rather than counting in their heads. Emphasise “slide and say” with students creating each mat by sliding on that number of objects, then “tap and say,” with students rechecking their count by tapping each item as they say the next number in the counting sequence. When finished, ensure students switch places and check their partner's counting mat for each completed set to provide more oral counting practice.

Instruct students to leave each counting mat set up throughout the session, until you have checked it, rather than tipping out their objects each time. This will also help ensure that you can check students' work as you roam and pick up any counting mistakes, without these being tipped out as soon as the student completes one template.

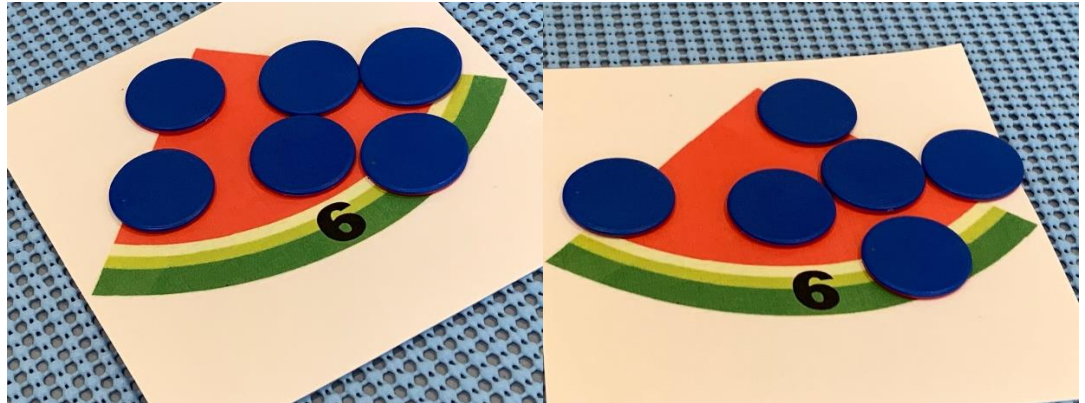
Questioning:

- What will come next? What number did you make before this one?
- If I move the mats around like this, can you put them back in order? Which number is the biggest in this set? Which is the smallest?

Support: Use the mats sequentially and build one-by-one, not mixing up the order of the squares as you may for more mid-range students.

Extension 1: Start with set 5 and set 6 (skip sets 1-4). For set 5, students could create their own set of matching cards for higher numbers, such as 9 and 10 or the teens.

For set 6 (watermelons), challenge students to write the worded form of each number. Then ask students to arrange their completed watermelon slices to find all the ways to make 6. For example, to make 6, use the 2 and 4 watermelon, two of the 3 watermelons, the 7 watermelon take away 1 seed and so on.



Students can draw their findings in their book using triangles as the slices and dots as the seeds, under a heading of 6. Students who are capable can also write matching number sentences, $7 - 1 = 6$ and $2 \times 3 = 6$. Emphasise for students to use the equal sign – it is like the full stop of maths.

Extension 2: Use the counting mats to practise skip-counting by 2, with the teacher putting out only the even numbers after they complete each set.

Variation: Roll a 6-sided die and make the number as Play-Doh or using pompoms. Also, dinosaur kinder circles, or spiders on plates, and so on.



Formative assessment: Set up a tray tin of cupcake wrappers to see if students can match each digit to its quantity. Create a worded set as well. For students who do well with the digits or words in sequential order, rearrange so the words or digits are out-of-order.



Counting Lesson 11

Rolling Eyeballs!

Learning intention: Make a quantity, then record its matching digit and word.
Maths vocabulary: count – slide and say counting strategy, drop and say counting strategy, how many, digit, word

YouTube hook:

Monsters Inc.
[youtube.com/
watch?reload=
9&v=6tCxnHC
qqxg](https://www.youtube.com/watch?reload=9&v=6tCxnHCqqxg)

This session, you are going to be making the weirdest, ugliest, craziest monsters, so much so that you will want to do this:

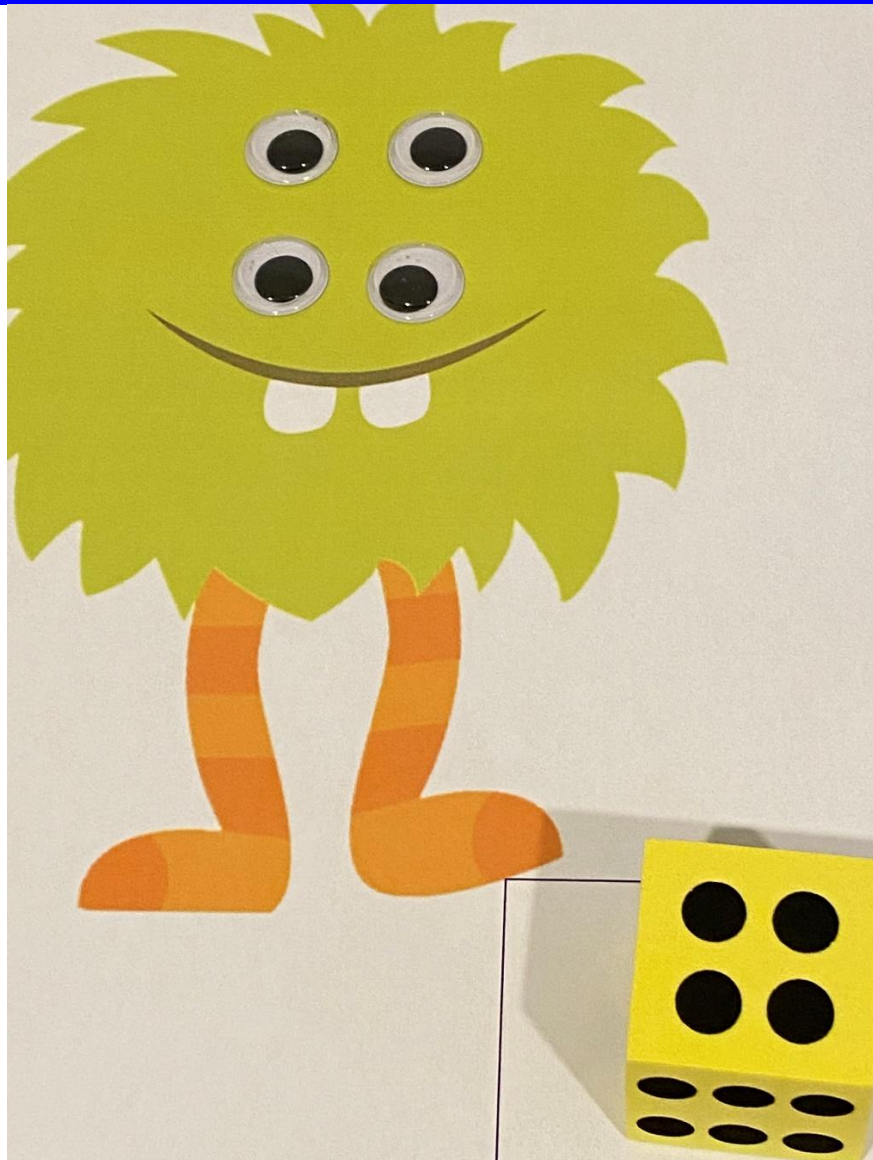
[youtube.com/
watch?v=cmP
CYt-oABl](https://www.youtube.com/watch?v=cmPCYt-oABl)

Lesson summary: Students roll a 6-sided dot-dice or, for extension, a 10- or 20-sided digit dice, placing the matching number of eyeballs onto their monster. Students use the recording template to write the matching digit and word for each number monster they make.

Materials:

- [Monster templates](#) from this unit's folder.
- [Digit-Drawing-Word](#) recording template.
- 6-sided die. For extension, 10-sided dice or roll two 6-sided dice for an addition focus.

Best set-up: Fishbowl model, then students work independently.

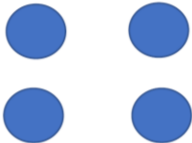


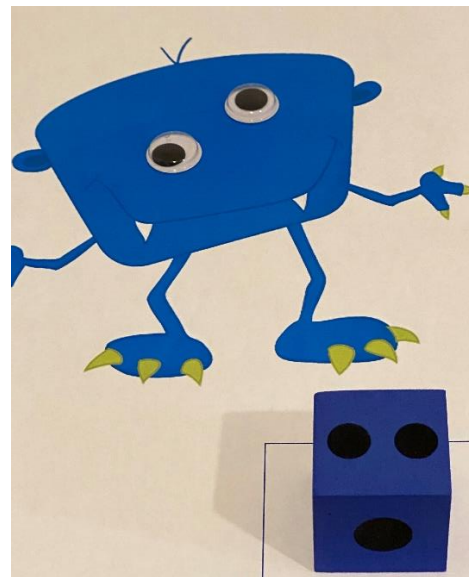
Modelling: Model the 'slide and say' counting strategy, sliding each eyeball onto the monster at the same moment you say the next number in the counting sequence. Students could also try the 'drop and say' counting strategy, collecting a handful of eyeballs in one hand, then dropping one at a time with their other hand. Say the next number in the sequence at the same time you drop the eyeball.

Encourage students to link this task to maths superhero eyes (subitising) as well, by trying to instantly see the number they rolled on the 6-sided die, without counting the dots. Some students may still need to count the dots, but after repeated practice of rolling 6-sided dice for many maths warm-ups and sessions, students will start to trust seeing the number they rolled without counting it. This may take lots of practice using dot dice in the classroom very regularly, particularly if they have not used any dot-dice at home or kinder.

Also try to arrange the eyeballs so they are easy to see straight away.

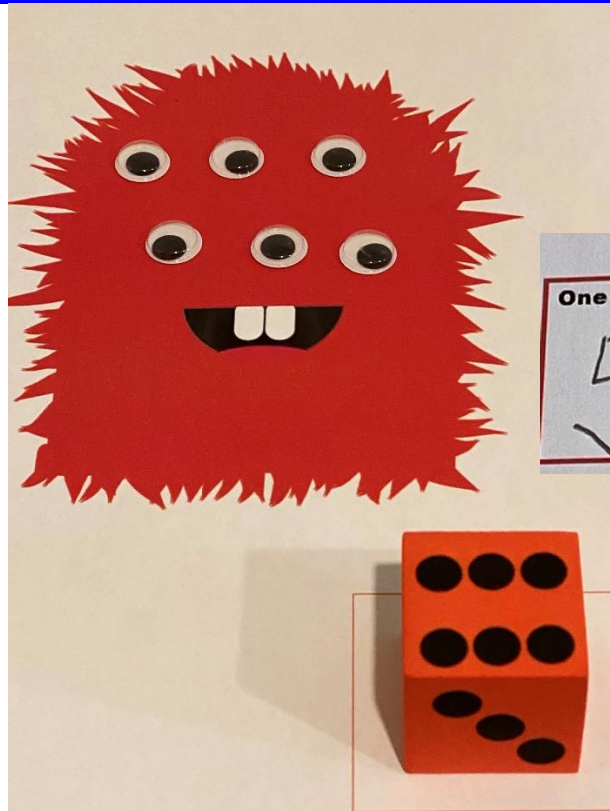
Students record using the Digit-Drawing-Word [recording template](#):

Digit	Drawing	Word
4		four



Variation 1: Compare your monster against your partner's. Who has the bigger/larger number? Who has the smaller/lower number?

Extension question: How many more do you have? What is the difference between your and your partner's number?



One less	Number	One more
5	6	7

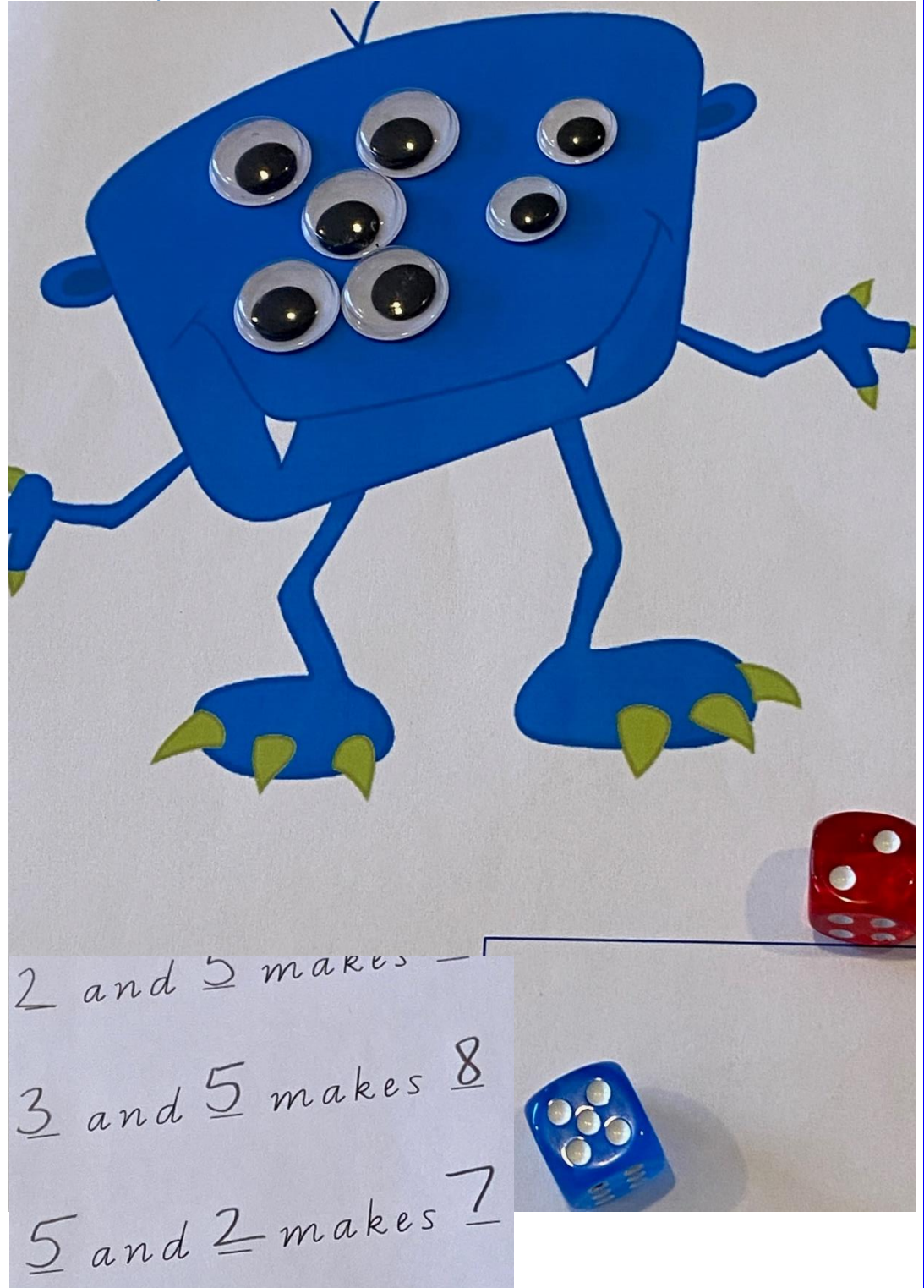
Variation 2: After you make the number you rolled, figure out one less and one more, using the eyeballs to help you. Record this using the [one more, one less box template](#).

Support: Roll a 3-dot dice to keep the numbers within their current counting range if needed.

Extension 1: Use a 10-sided dice, or 20-sided:



Extension 2: Roll two 6-sided dice and add the result. Use small googly eyes for one dice and large googly eyes for another. Record using the [and is template](#).



Support Students – Ongoing Counting

Throughout the year, aim to provide as many additional, incidental opportunities as possible for support students to practise counting.

Examples include:

- Can you please check how many students are here today while I do the roll?
- Can you please check I have all my whiteboard markers for the day by counting them for me?
- Can you please check how many books are in this box?
- Can you please check how many lunch orders are in the tub?
- Can you please be my line monitor and check how many people are in the line as we walk out the door?
- Can you please count these notices for me?
- Support students could even be given the title 'Counting Monitors' all year.

Home Partnerships: Discuss the [How to Help Your Child Learn to Count](#) ideas (newsletter example in this unit's folder) with parents directly, front-footing that their child is behind and that helping at home can make a big difference. Some parents do not realise their child is behind and, when they are informed of this as part of a proactive school approach, will increase their level of home involvement. Send home the [counting mat templates](#) with a small bag of materials that match that template each week; these can be exchanged each Monday for a new set of templates. Also send home the [memory game templates](#), [bingo board](#) with a bag of cubes and [set 2](#) of the counting frames with a small bag of teddy bear counters.

Also consider recommending a quantity-digit matching game for parents to play with their children at home (*Ratuki*), available through eBay. Even the game of *Uno* helps with digit recognition. Games of *Snap* or *Go Fish* with regular playing cards are also great. Playing boardgames such as *Snakes and Ladders* is also great for developing one-to-one counting and subitising using 6-sided dice. Connect 4 is another game that encourages strategic thinking but also develops counting and subitising up to 4.

