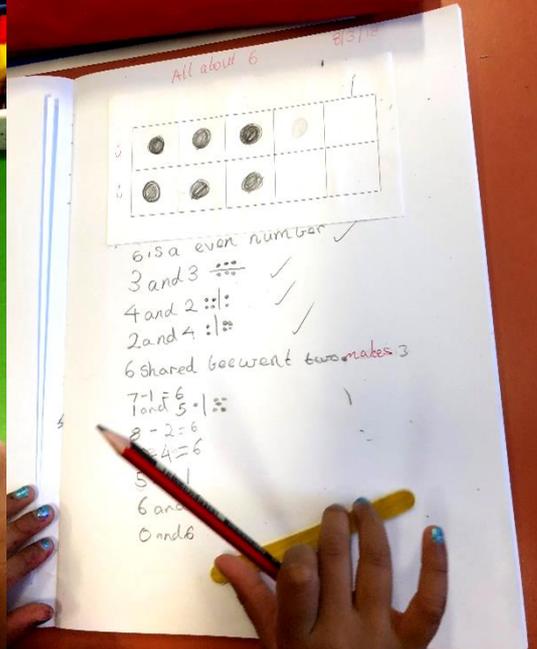


Place Value  
Unit 3  
Count to 10

Foundation /  
Kindergarten  
Level



# Developmentally Sequenced Materials-Based Mathematics

## EARLY YEARS PACKAGE

Sequential units with materials-based mathematics for F/K, Year 1, Year 2 and Year 3 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!

Engaging real-life mathematics linked to students' interests

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

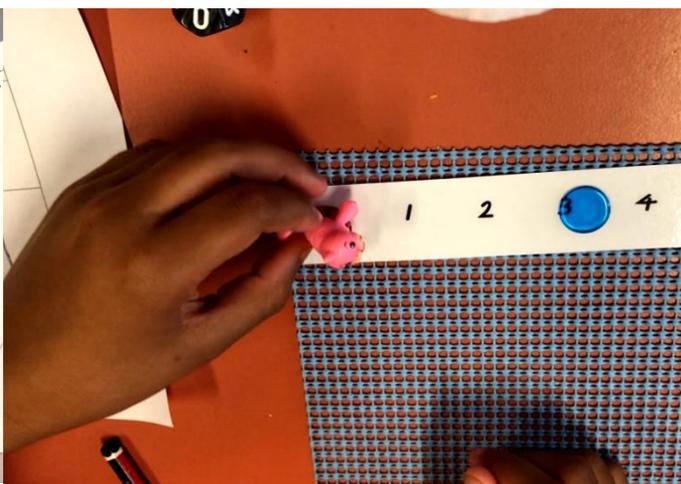
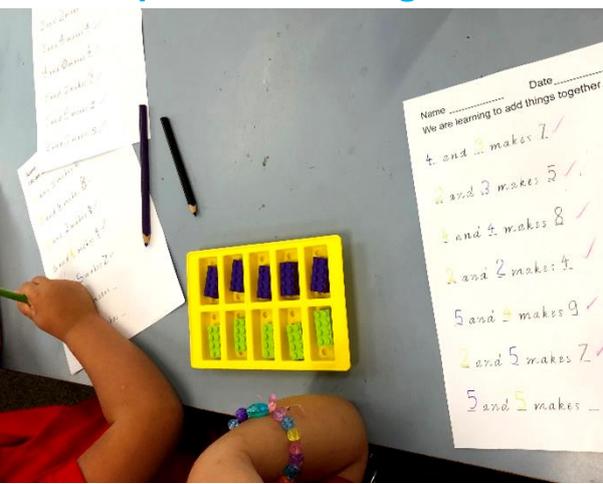
Easy-to-use: Supports Teachers and Maximises Planning Time

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



# Place Value Unit 3 – Count to 10

## Hyperlinked Table of Contents

Curriculum and Syllabus Links for Foundation / Kindergarten [Pages 3-5](#) Teaching Tips [Pages 5-6](#)  
 Parent involvement [Pages 7-8](#)

**Warm-up Games:** Simon Says Counting, Popsicle Stick Concerts, Number Antlers, Counting Listens, Roll and Make, Digit Roads, Peek-a-Boo [Pages 10-12](#)

### Lesson Sequence and Options

**Note:** This unit starts at Lesson 12, continuing from the previous counting unit: [Place Value Unit 2 – Count to 3, then to 6](#)

<p><b>Lesson 12</b> Nature Count <a href="#">Pages 13-22</a></p>		<p><b>Lesson 13</b> Clip and Count Cards and Dinosaurs <a href="#">Pages 23-26</a></p>	
<p><b>Lesson 14</b> Craft Counting <a href="#">Pages 27-31</a></p>		<p><b>Lesson 15</b> Out-of-Order Bingo! <a href="#">Pages 32-34</a></p>	
<p><b>Lesson 16</b> Race to 10 Robots and Ladybirds <a href="#">Pages 35-41</a></p>		<p><b>Lesson 17</b> Mystery Card Counting <a href="#">Pages 42-45</a></p>	
<p><b>Lesson 18</b> Counting Mats <a href="#">Pages 46-52</a></p>		<p><b>Lesson 19</b> Number Shake <a href="#">Pages 53-55</a></p>	
<p><b>Lesson 20</b> Exercise Counting <a href="#">Pages 56-59</a></p>		<p><b>Lesson 21</b> Number Envelopes <a href="#">Pages 60-61</a></p>	
<p><b>Lesson 22</b> Number Beats and Indigenous Counting <a href="#">62-65</a></p>		<p><b>End-of-Unit Celebration</b> 1 to 10 Build a Bear! <a href="#">Page 66</a></p>	

# **Place Value Developmental Step 3:** **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 the following lessons**

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 and Western Australian Curriculum Number and Place Value – Foundation:**

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.

### **Australian and Western Australian Curriculum Number and Place Value – Foundation:**

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 – [see lesson 22 variation.](#)

**Victorian Curriculum Number and Place Value – Foundation:** Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point ([VCMNA069](#))

- 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.

**Victorian Curriculum Number and Place Value – Foundation:** Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond ([VCMNA070](#))

- **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 by placing one pebble in a bag to represent one object. For example, to count the number of cattle.

**Victorian Curriculum Patterns and Algebra – Level 1:** Recognise the importance of repetition of a process in solving problems ([VCMNA094](#))

- using one-to-one correspondence to determine which of two sets is larger, or if they are of equal size.

**NSW Maths Syllabus Whole Numbers – Kindergarten:** Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002)

- read numbers to at least 20, including zero, and represent these using objects (such as fingers), pictures, words and numerals (see [Place Value Unit 13 Teen Numbers](#))
- recognise numbers in a variety of contexts, eg classroom charts, cash register, computer keyboard, telephone (Communicating)
- **communicate the use of numbers through everyday language, actions, materials and informal recordings (Communicating)**
- estimate the number of objects in a group of up to 20 objects, and count to check (see [Place Value Unit 14 Rounding and Estimation](#))
- use 5 as a reference in forming numbers from 6 to 10, eg 'Six is one more than five'
- use 10 as a reference in forming numbers from 11 to 20, eg 'Thirteen is 1 group of ten and 3 ones' (see [Place Value Unit 13 Teen Numbers](#)).

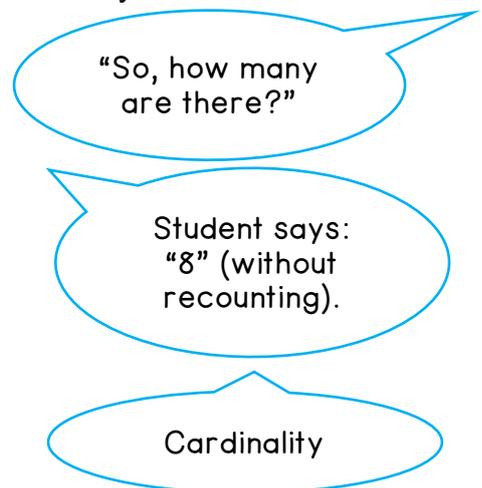
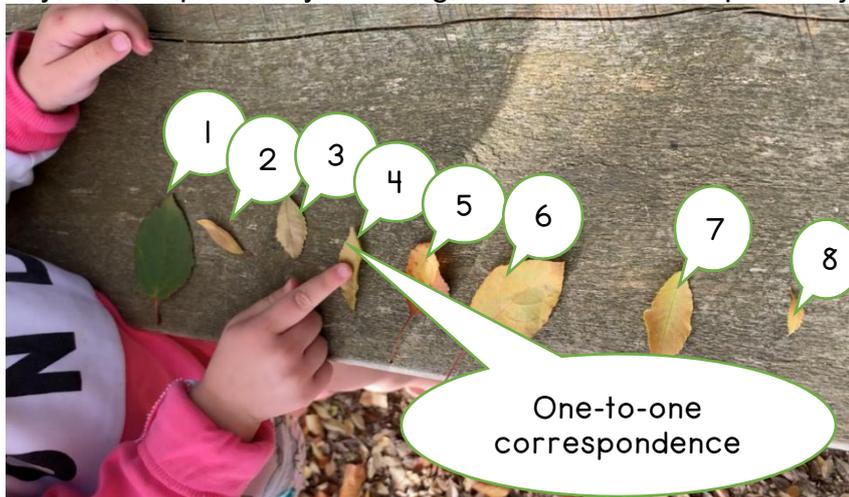
**NSW Maths Syllabus Whole Numbers – Kindergarten:** Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA002).

- **count with one-to-one correspondence**
- **recognise that the last number name represents the total number in the collection when counting (Communicating).**
- make correspondences between collections, eg 'I have four counters, you have seven counters. So you have more counters than me'
- compare and order numbers and groups of objects
- **apply counting strategies to solve simple everyday problems and justify answers (Problem Solving, Reasoning)**

## 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.' There is an overview of these strategies in this unit's folder ([Counting Strategies Overview](#) – copied below). Subitising is another strategy for solving small collections, which is the focus of [Place Value Unit 5](#) and [Unit 6](#).

## One-to-One Counting Strategies

### Touch and Say Counting Strategy:

Place all the items in a line. Touch each item from left-to-right as you say the next number. If the items are not in a straight line, aim to work top-to-bottom, left-to-right to avoid missing an item.



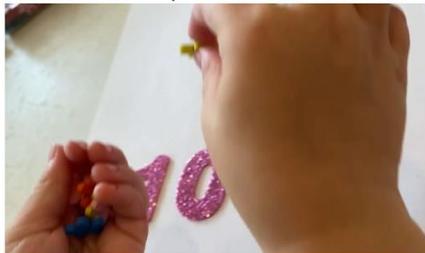
### Slide and Say Counting Strategy:

Place all the items on one side of the page. Slide across one at a time as you say the next number in the sequence.



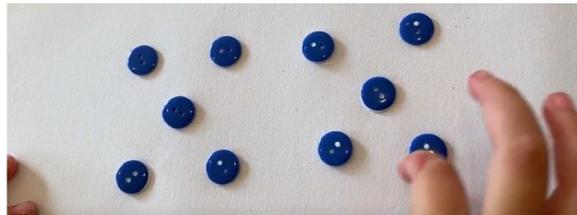
### Drop and Say Counting Strategy:

Place all the items in one hand. Use your other hand to drop one item at a time, saying the next number in the sequence as the items drops.



### Subitising (Superhero Eyes) Strategy:

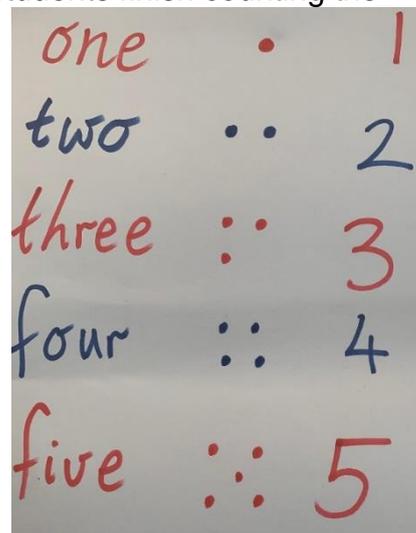
Not a counting strategy, but often it is preferable. Instead of counting, see the parts by circling around each section with your finger, as you say, "I see, I see, that makes\_." If the items are not easy to see, arrange them into how numbers look on dice to make it easier.



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, "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, FIVE!"

Assist students to connect the quantities to their matching digit and worded forms by using an anchor chart similar to the one shown here, located on your classroom numeracy wall so you can refer to it frequently.



# Parent-School Partnerships

Just like home reading for literacy, parent engagement in early numeracy 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 opportunities with everyday materials, and games that can be played and enjoyed 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 understanding, 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 repeat at home. Maths is not scary if it is enjoyed!

## 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?

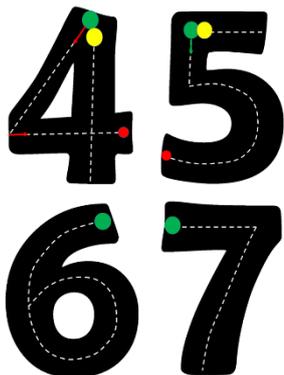


### Secret Socks

**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



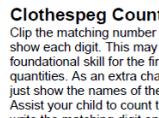
### Home Hopscotch

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: [https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/english/literacy/LiteracyandNumeracyTipstoHelpYourChild\\_Final.pdf](https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/english/literacy/LiteracyandNumeracyTipstoHelpYourChild_Final.pdf)
- New Zealand list of tips for parents: [https://nzmaths.co.nz/sites/default/files/pdf/HSPNHandbook\\_6.pdf](https://nzmaths.co.nz/sites/default/files/pdf/HSPNHandbook_6.pdf)
- New Zealand list of games to copy into weekly parent newsletters: <https://nzmaths.co.nz/home-school-partnership-numeracy-activities>



## Warm-up Games

Game	Warm-ups for Counting to 10	
<b>Simon Says – Counting Version</b>	<p>Call out an instruction, for example, “Five stomps!” Watch as the students stomp five times. Watch your support students particularly closely. Encourage capable students to partition the number, for example, stomp 3 times, then another 2 times, and be ready to explain their strategy. The same can be done for clicks, air punches, claps, spins and star jumps.</p> <p>For extra engagement, create a large die out of cardboard with actions drawn onto it, rolling it alongside a giant 6-sided die, to determine how many times students do that movement.</p>	
<b>Popsicle Stick Concerts</b>	<p>Students sit in a circle with popsicle sticks. One student rolls a giant foam 6-sided dot die into the middle of the whole-class circle. Students then use their popsicle sticks to create that number of beats, keeping their beat in sync, like an orchestra. Another version is to make one student ‘the conductor.’ That student makes a certain number of beats with their popsicle stick instrument. After they finish, the class orchestra repeats the beats, then all students try to guess the number that the conductor made, in order to become the next conductor. The teacher records the number as a digit and word on the whiteboard.</p>	

## Number Antlers

“Use your fingers to make 3. Hold these above your head like the antlers on a reindeer!” At first, most students just hold up 3 fingers on one hand.

Can you make 3 another way? Can you use your other hand too? For example, two fingers on the right hand, one finger on the left hand. This warm-up encourages flexibility with the numbers 3 to 9, front-loading partitioning ([Addition Unit 4](#)), and also encouraging students to subitise when they count (instead of counting 1, 2, 3; just seeing, 2 on one side and 1 on the other as making 3).



Two students can combine to make teen numbers, like the right-hand photo showing 12 as 10 and 2 more.

## Counting listens

The whole class closes their eyes. The teacher uses a metallic container and drops objects into it that make loud or sharp sounds, such as marbles into a tin can. The class tries to keep count in their heads, raising their hands to try to answer ‘how many’ sounds there were, as well as guessing what objects were being used at the end of each round.

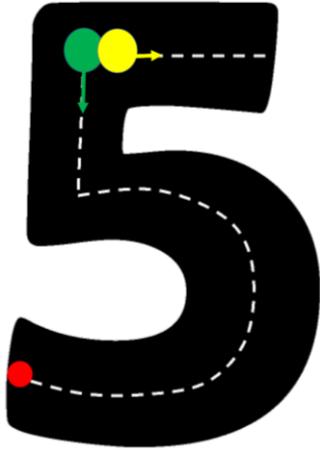
## Roll and Make

Students roll a 10-sided digit die, then make that number using a different type of counter for the warm-up each day. This challenges students to connect the digit to a quantity. Students record the digit, a drawing of their collection and the worded form of each number in the [Digit-Drawing-Word](#) recording template.

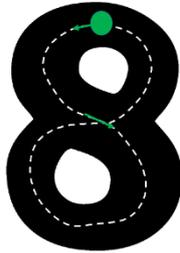


[Recommended desk charts](#) are available for assistance, particularly with spelling the worded form, and to connect the digit to a visual representation. Ensure that an anchor chart, like the one in the [Teaching Tips](#) section, is visible to assist students.

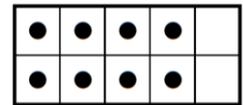
## Digit Roads – continue daily



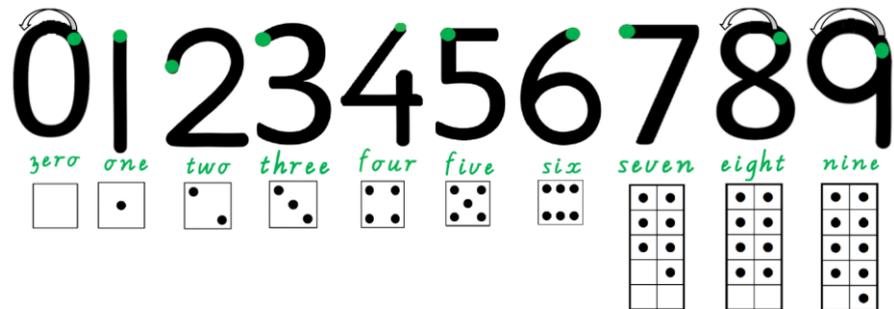
Continue using the [digit road](#) templates and [digit formation songs](#) to ensure students are building good muscle memories, as they learn (or relearn) how to write each digit.



Make an 'S' and close the gate for eight.



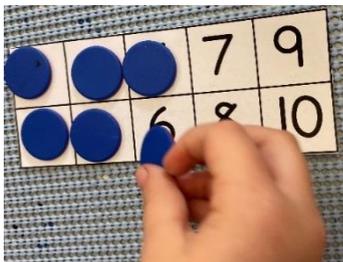
The [digit road](#) templates and [matching whole-class PowerPoint](#) are in this unit's templates folder. Sit students in a circle with the digit road templates and green counters to trace over the digit as you sing together as a class. [Recommended desk charts](#):



## Counting Songs – continue daily

Choose from the comprehensive and sequential list of [Counting Songs from Unit 1](#) to continue to build students' familiarity and confidence in counting sequences. These are usually delivered as pre-warm-ups, with songs playing as students transition from literacy or enter the classroom from recess or lunch.

## Peek-a-Boo Ten Frames



Students work in pairs. Student A shuts their eyes. Student B uses cubes or counters to make a number on a grip mat or paper plate. Student A opens their eyes and tries to count (using 'touch and say' or 'slide and say' strategies), or see the number using their maths superhero eyes (subitising). Student B then places the number on the [supported ten frame](#) (shown left), building it in two rows from left-to-right. Student A lifts the final counter to check they counted or subitised correctly. **“Peek-a-boo, what number are you?”** Then student B closes their eyes, while student A makes a number for student B to try to solve.

The [supported ten frame](#) has the numbers written in, organised in the correct ten frame layout in pairs to highlight odd/even and to make numbers easier to subitise. For example, if 6 is set up as 5 and 1 it is very difficult to subitise, but when set up as 3 and 3, it can be more readily subitised using students' 'superhero' eyes. This is the way numeracy coaches recommend using ten frames (not 7 as a set of 5 then 2 more, but with 7 set up as 3 and 4 to connect to 'double 3 and 1 more' for subitising and near doubles).

**This unit commences from Lesson 12, continuing from [Place Value Unit 2](#), which focuses on counting to 3, then to 6.**

**Lessons 1-11 for one-to-one correspondence are in [Unit 2](#).**

## Counting Lesson 12

## Nature Counting – then Nature Graphing and Leafy Numbers

**Learning intention:** Count using frames to help you check your count up to 10  
**Maths vocabulary:** count (touch and say), how many, digit, word

**Outdoor maths:** Do you ever want to go outside and just collect all the fascinating things you see? Give me some examples of cool things we might find outside: colourful rocks, sticks of all different sizes, odd-shaped leaves. Let's go!

**Counting songs:** Continue to use the counting songs from [Place Value Unit 1](#) as pre-warm-ups.

**Lesson summary:** Students collect natural items from the yard (bark, leaves, sticks, rocks), placing these in a bucket or small container. Students return to the classroom to count each collection. When finished, students swap their collections with another student and count again. Students also measure (using direct comparison) and graph their collections. Finally, students make animals that show given quantities using leaves.

### Materials:

- Buckets/makeshift containers for students to store as they explore.
- Newspaper to sort their objects with minimal mess in the classroom.
- [Counting frame](#) from this unit's folder. Enlarge to A3 on the photocopier. This template supports students to create the correct quantity in each section of their ten frame, with both the matching digit and word. This set-out also starts to support the odd/even concept, with odd numbers along the top row and even at the bottom, as well as the frames showing which numbers have partners and which do not.

**Best set-up:** Students collect objects with the class, then count independently using the [supportive templates](#).



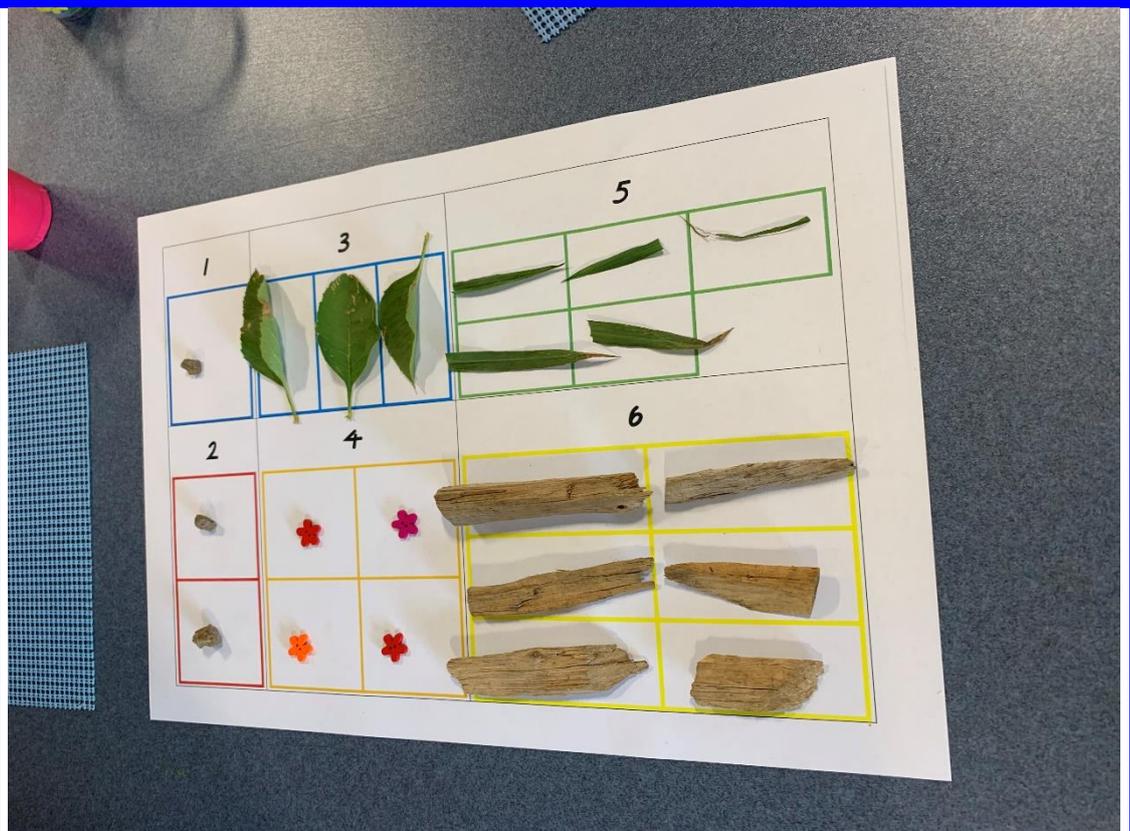
**Classroom management tips:** During the collection part of the lesson, set a strict time limit of 5 minutes. Encourage students to just 'grab' some objects but different amounts each time, i.e. sometimes just collect one or two, other times grab a handful. Make it clear that the goal is to have a different number of each object, not the most objects. *Safety tip:* Advise students to avoid bushy areas and watch out for snakes and spiders.



**Modelling:** When you return to the classroom, model sorting out your own bucket, by first placing objects in categorised piles. Sort and classify the objects by their type, for example, all the leaves on this side, all the rocks on this side. Provide students with a piece of newspaper to minimise the mess caused to the classroom, or do this in an outside space if possible.

Model putting 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. "Tap/Touch and say," or, "Slide and say." Finally, model finding the correct digit and putting the leaves in that box: "I had 5 leaves so my leaves go in the number 5 box." 5 looks like this as a digit (pointing to the digit) and this as a word (pointing to the word).



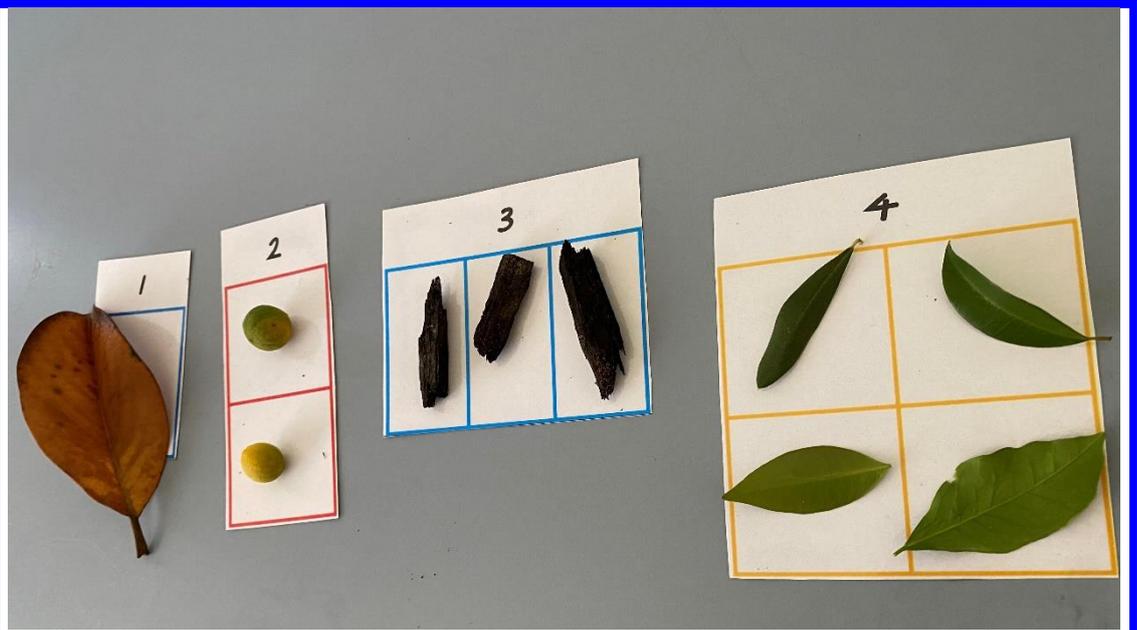


[Support template that only includes 1-6](#) – second page of this template

### Questioning:

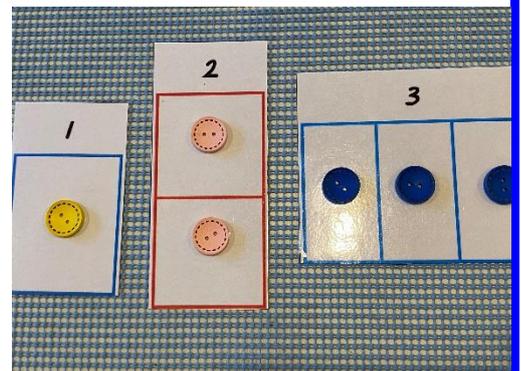
- Can you move your objects around so that it is easy to see how many there are; for example, so 5 looks like 3 and 2, or like a 5 on the dot dice?
- How many would there be if I put one more on? Physically add one more. So, what number is one more than 5? What number comes next? What number do you say straight after 5?
- How many would there be if I took one away? Physically take one. So, what number is one less than 5? What number comes just before 5? Which box would the leaves go into then?

**Variation:** After sorting and counting their own objects, and showing the teacher, which is a great maths portfolio photograph opportunity (as in the photograph above), students return all objects to their bucket and swap with someone else who has finished, sorting and counting a brand new collection. This can continue the following day, providing many rich opportunities for students to count real-life objects and connect a quantity to its digit and worded forms.

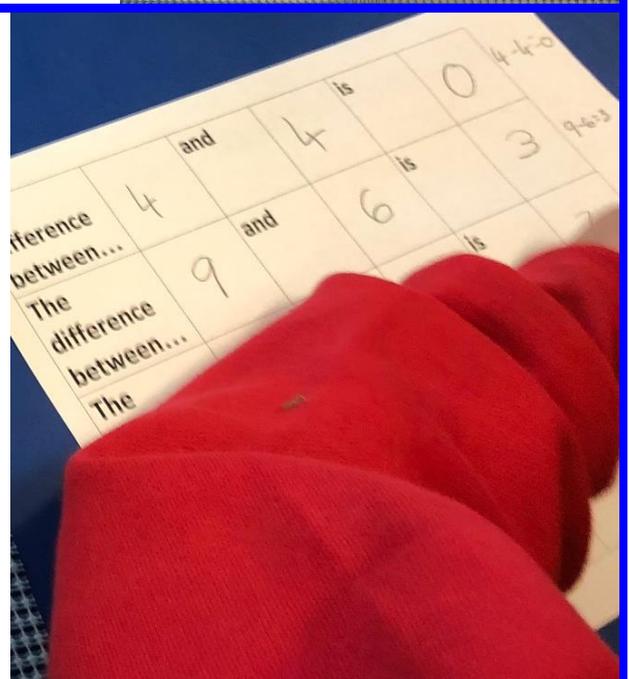


**Support:** Cut the [support template](#) (page 2 of this template) into separate boxes, as shown above.

If there are extra squares or not enough squares, you are in the wrong box – try again! Also consider using the other pages from the [counting frames set 1 – 1 to 6](#), from Place Value Unit 2.

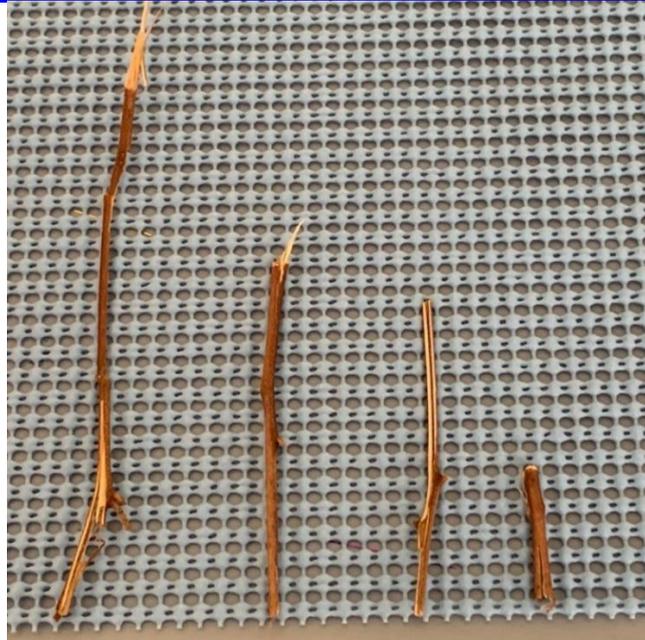


**Extension:** Use the boxes to figure out the difference between numbers. For example, I have 5 leaves, when I put them in the 6 box there is 1 extra square, so the difference between 6 and 5 is 1, or  $6 - 5 = 1$ . Do this for multiple boxes. I put the 5 leaves in the '3' box, there are 2 extra leaves, so the difference between 5 and 3 is 2, or  $5 - 3 = 2$ . The minus sign means the 'difference between' or the 'gap between' 5 and 3 (it does not mean take away in this instance, we are using the second meaning of the minus sign). Use the [Extension – difference between recording](#) template from this unit's folder.





**Link to sorting/patterning – potential follow-on lesson with the same materials:** This session already involves basic sorting/classifying, which forms the first foundations for patterning. After the counting part of the lesson is completed, students could create patterns using their materials for like-ability partners to solve and continue (as shown above).



**Link to measurement and direct comparison for length/height– potential follow-on lesson with the same materials:** Ask students to sort their objects from longest to shortest. Model this with your own objects. If all students collected sticks, they could just sort the sticks by size. Alternatively, students could choose one object from each category, then sort these by length.

Emphasise starting all objects from one side of a grip mat, as shown above, lining these up to ensure no object gets a head-start or unfair advantage. Model this using students' bodies, asking who is taller by choosing two standard-height students, but by allowing one student to stand on a chair. Is that fair? Can we work out who is taller if they are not starting from the same point?



**Link to graphing – potential follow-on lesson with the same materials:**

Ask students to create a pictograph using their materials. Students place leaves in one column, rocks in another. Use enlarged grid paper ([nature pictograph](#) template in this unit's folder) to ensure that students space their objects evenly. This ensures they can easily see how many leaves there are compared to rocks, and so on.

**Extension:** Students can record difference between equations from their completed pictograph: "I have 5 leaves and 6 rocks, 6 is 1 more than 5, 5 is 1 less than 6."

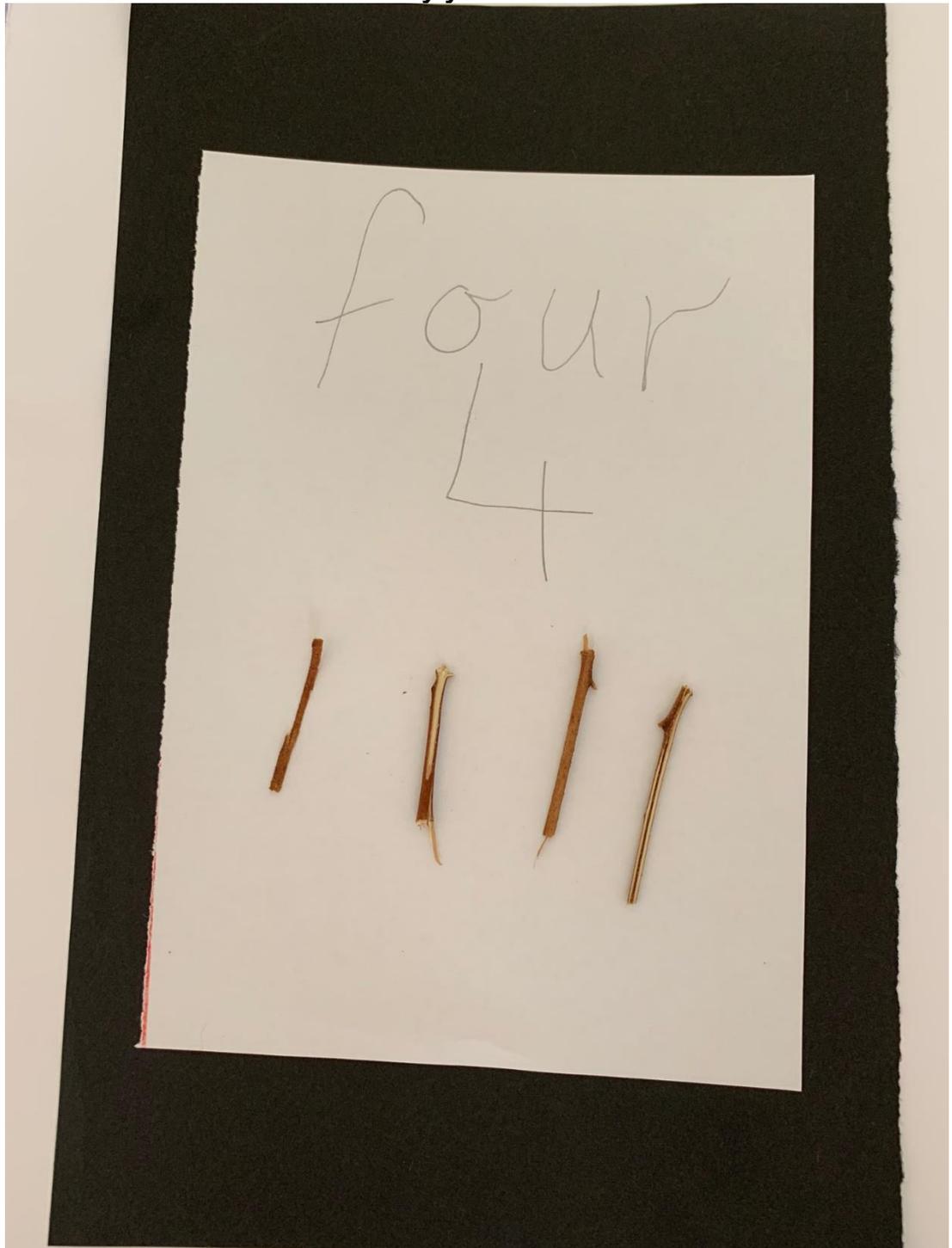
$6 - 5 = 1$  reading this as, "The difference between 6 and 5 is 1."

The difference between...	5	and	4	is	1	
The difference between...	6	and	2	is	4	$6 - 2 = 4$
The difference between...	4	and	1	is	3	$4 - 1 = 3$

Use the [Extension – difference between recording](#) template from this unit's folder.

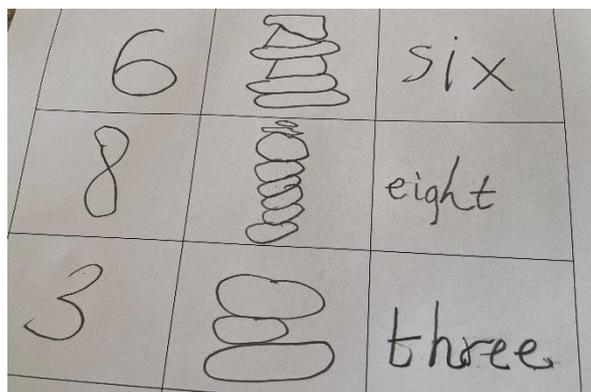
**Reflection:** Publish nature counting frames, with students sticking their favourite collection to a white A4 piece of paper using sticky tape or craft glue. Frame these with an A3 piece of black paper and display around the classroom with their matching digit and word.

**The most meaningful displays for classroom numeracy walls are those that have been created with or by yours students.**



**Variation 1 – STEM stone stacking challenge:** Students practise the ancient art of stone stacking, aiming to stack the most rocks and as tall a tower as possible. **Emphasise the language of measurement throughout this challenge, including higher, taller, wider, narrower, heavier and lighter.** At 3-minute intervals (YouTube timer available here [https://www.youtube.com/watch?v=6UKGHUvI0tc&ab\\_channel=Mr.Timer](https://www.youtube.com/watch?v=6UKGHUvI0tc&ab_channel=Mr.Timer)) students record using the [template](#).

Students draw the current number of rocks in their tower, as well as the matching digit and word for that number using the [digit-drawing-word recording template](#).



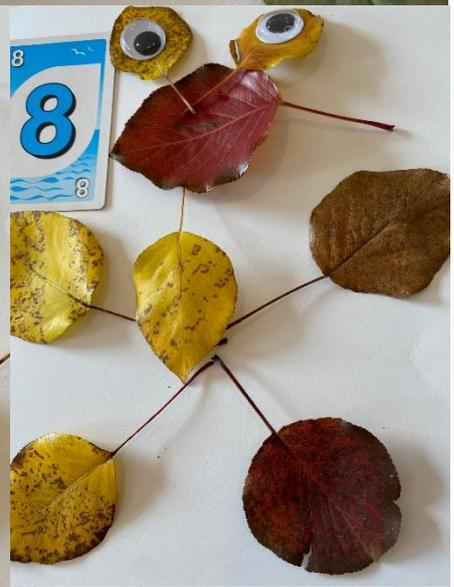
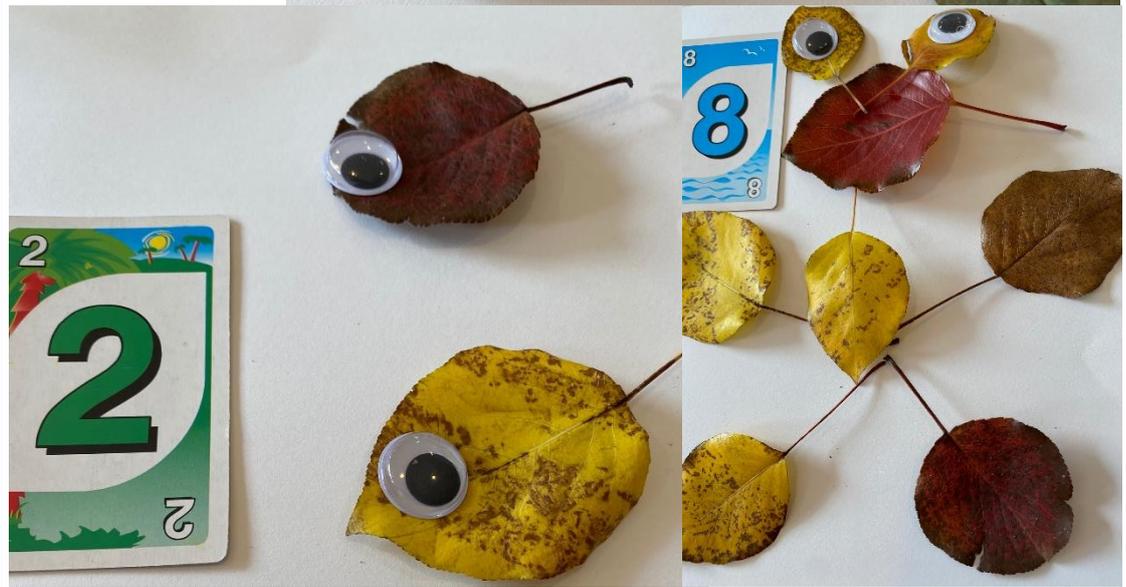
Halfway through the session, bring the class together to discuss the strategies different pairs are using, including placing the wider and heavier rocks on the bottom layer and the lighter and narrower rocks at the top.



Also use this session to practise hefting, with students comparing the mass of different rocks using 'arm scales.' Instruct students to make a see-saw using their arms. Then feel which rock is pulling their arm down to the ground. This is the heavier rock! Model that this is the same process that balance scales use – the side that goes down contains the heavier item. Are all small rocks light, are all big rocks heavy?



**Variation 2 – Leafy Numbers:** Students pull an Uno or playing card, then use that number of leaves to make a 'leaf character' or 'leaf animal.' Check their creation matches the number using 'touch and say' counting, then the teacher can spot-check it. Change the card and repeat with a new number.



**Variation 3 – Sensory counting:** This is a Montessori-style variation. Source some rolls of artificial grass from Bunnings (Bunnings or local hardware stores are often happy to donate to schools, if teachers or even the students call the front desk, or write a letter, and provide a certificate of appreciation). Use these grass mats to create extra engagement and sensory stimulation, as students count using ten frames made from popsicle sticks on top of their grass counting mats.

For one session, students could make a teddy bear picnic, counting the bears on their picnic rug (ten frame) as they pull digits from a number bag (shown below left). For another session, students could also use a large variety of different materials to show each number, as shown for the digit 5 in the photo. This can include the items they found during the first nature count session.



Autumn-themed version:

**Formative assessment – option 1:** [Count and circle](#) template to quickly check students' maximum counting range as a whole-class exit ticket.

### Count and Circle

Name: \_\_\_\_\_

		
2 1 0	1 3 2	4 5 3
		
5 4 7	6 5 4	6 8 5

## Counting Lesson 13

## Clip and Count

**Learning intention:** Count to 10 (or as high as you can) using 'clip and say'  
**Maths vocabulary:** count (clip and say), how many, digit, word

**YouTube clip:**  
Show students this shopping centre clothesline prank:  
<https://www.youtube.com/watch?v=gqEHZWjfv2I>. Now, it is your turn to clip and count!

**YouTube clip:**  
Show students short snippets of this clip of the 'Walking with Dinosaurs' stage show:  
<https://www.youtube.com/watch?v=5q22act50Eg>. Also watch this clip in the days leading up to this session, during eating times:  
<https://www.youtube.com/watch?v=SPf8s6jGC-U>.

**Lesson summary:** Students clip pegs/spikes onto [dinosaur templates](#), matching the digit on the dinosaur to its quantity. Students can also put pegs onto cards (use Uno cards for less support; the [template cards](#) for more support).

### Materials:

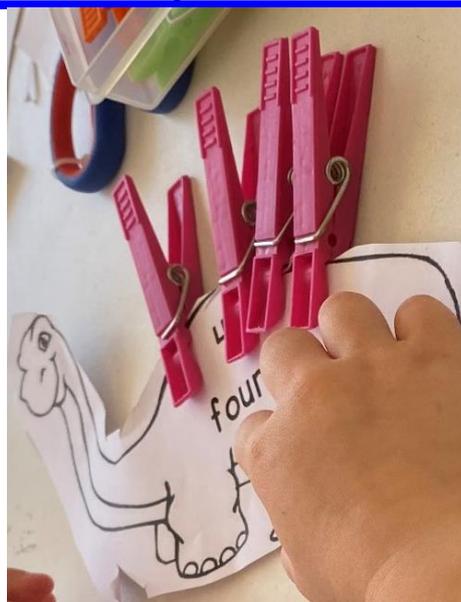
- Pegs – bulk packs available for \$5 from Bunnings.
- [Clip and count dinosaur templates](#). Pre-cut and laminate. To enable students to use the pegs as spikes, the dinosaur must be cut out around its curves – an ideal job for a parent helper, or just create one set to share around the year level team. The variation version of the session requires only one dinosaur per student and is a less-labour intensive way to deliver this session (although it is less supported).
- [Clip and count dinosaur recording](#) templates from this unit's folder.
- *For support:* [Clip and count card](#) templates from this unit's folder that show students the counting progression within each number (1, 2, 3, 4, 5!), then emphasise the cardinal number. These could be sent home for further practice.

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

**Modelling:** This session, we are using "clip and say," as you clip each peg, say the next number in the count. Encourage students to punctuate and emphasise the final peg, "1, 2, 3, 4!" to push cardinality (knowing the final number said represents the total).

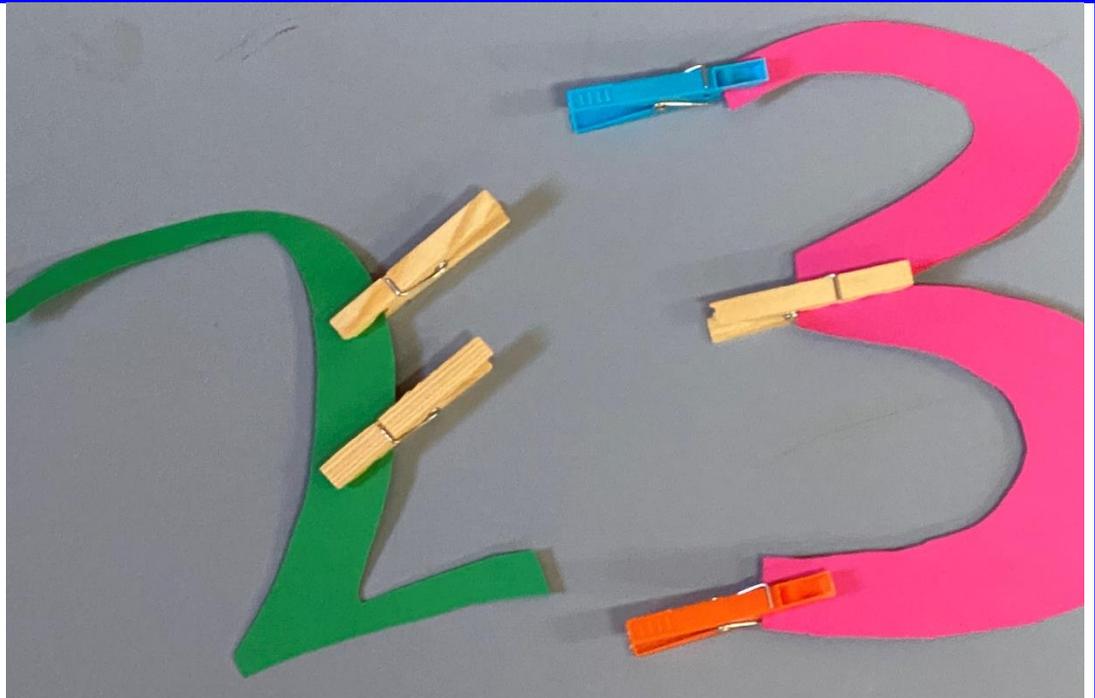
Model the [dinosaur recording templates](#). Numbers come in 3 forms:

1. Using objects (pegs for this lesson)
2. Using a digit.
3. Using a word.



**Counting songs:**

Continue to use the counting songs from [Place Value Unit 1](#) for pre-warm-ups.

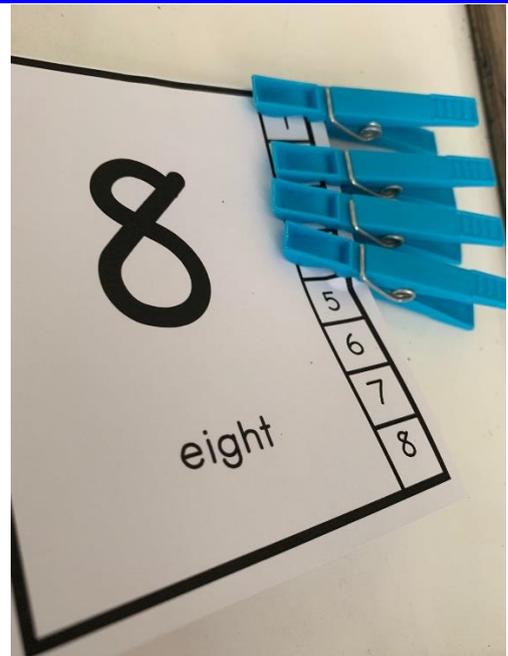


Foam digits, coloured paper or digits cut out of cardboard also work well, helping students to see the connection between the quantity and the digit as a highly visual representation. Place dots on the number (two dots on 2) for extra support.

These giant digits could be pegged by support students after they complete their [clip and count card sets](#), then used as a whole-class display for your numeracy wall.

**Questioning:**

- How many ways can you arrange 4 pegs? 3 at the front and 1 at the back of the dinosaur, 2 and 2, 4 and 0.
- What if I clipped one more peg onto this one? What number would it be? How did you figure it out? Encourage students to count on (putting the current number in their head and just saying what is next), as opposed to re-counting all the pegs.
- What if I took away one peg? What if I took away two pegs?



**Support:** Use the [clip and count card](#) templates before the dinosaurs, requiring that students practise using these first to earn their dinosaur templates. Print the [dinosaur templates](#) for these students on coloured paper, so they receive 'special dinosaurs' after they finish the more supportive clip and count cards first.

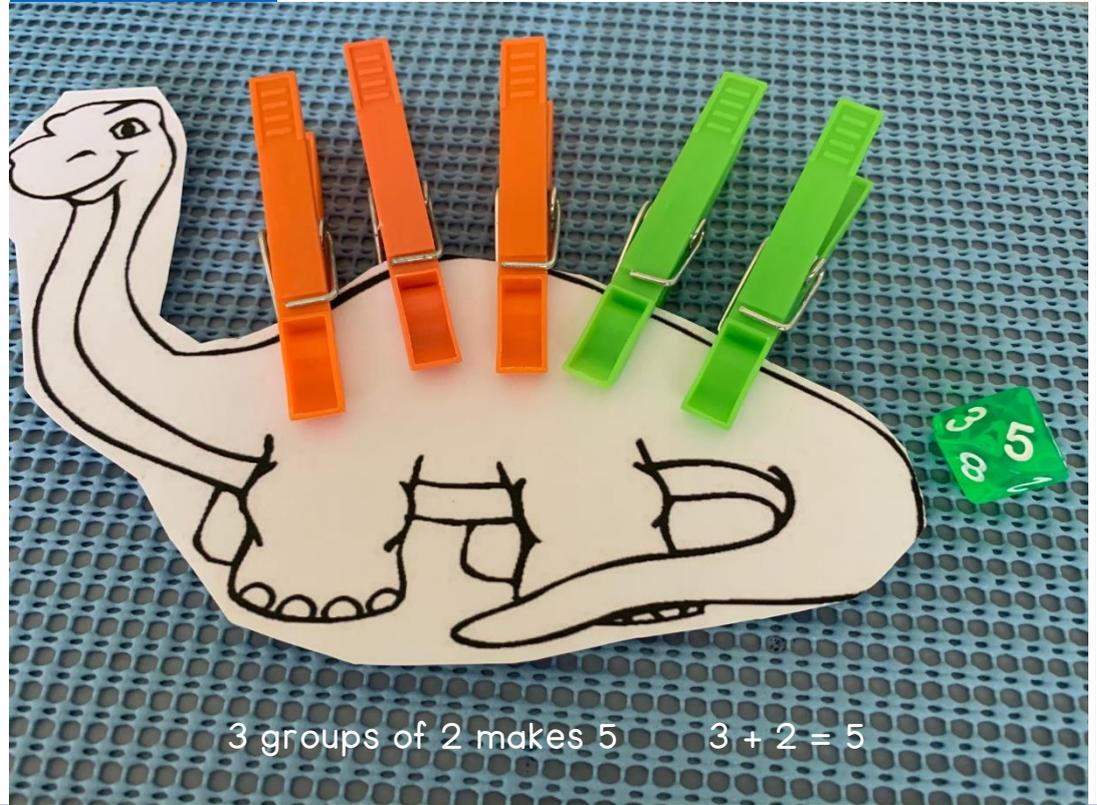
**Extension:** Use the pegs to partition each number, recording the matching number sentences. For example, 9 spikes can be 4 at the front of the dinosaur and 5 at the back, or  $4 + 4 + 1$ , or  $2 \times 4 + 1$ , or  $3 \times 3$  (3 groups of 3 spikes). If possible, use different coloured pegs to support this, particularly for the groups of number sentences.



Students could also use the dinosaurs to create subtraction number sentences. For example, a 7 dinosaur that loses 5 spikes has 2 left:  $7 - 5 = 2$ . Investigate all the ways to take away from their dinosaur's total, particularly since the starting number is still written on the dinosaur as the largest/total number of pegs. This provides a supportive cue to always start from and record the larger number first for a take away situation.

**Exit ticket challenge:** Order all your dinosaurs from least to greatest number of spikes.

**Variation:** Give each student just one of the laminated blank dinosaur templates from the last page of the [template](#) document. Roll a 10-sided die onto their dinosaur (while it sits on a grip mat to avoid dice-rolling noise). The student then clips the rolled number of pegs to their dinosaur, recording the matching digit and worded form for that number onto their [recording template](#).



## Counting Lesson 14

## Craft Counting

**Learning intention:** Count to 10 using 'slide and say,' recording the matching the digit and word for each number, saying what you notice about each number  
**Maths vocabulary:** count (slide and say strategy), how many, digit, word

### Arts and crafts

**maths:** Who loves art? Who loves maths? Well, today we're doing arts and crafts maths!

See the **variations section** for alternative literacy-based hooks linked to picture story books.

**Lesson summary:** Students build 1 button, then 2, then 3, and so on to complete craft [counting frames](#), aiming to make it up to 10 for each; then switch to a new craft object and repeat for more practice. Students are also encouraged to express what they notice about each number and some different ways to make each total.

Later, students can also roll a 10-sided dice and play bingo against a partner, aiming to be the first to fill all the numbers on the frame.

### Materials:

- Craft materials, including buttons, googly eyes, small flowers, pompoms or counters. *For the bingo game version:* 10-sided dice.
- [Sequential counting templates](#) from this unit's folder – [support](#), [mid-level](#) and [extension](#) versions available, as well as [variation versions](#) with alternative hooks explained on the pages that follow.

**Best set-up:** Fishbowl model, then students make their own around a whole-class circle to enable more immediate teacher feedback and support.

**Modelling and questioning:** Fishbowl model filling the [frame](#) using an A3 enlarged version, using your personal favourite craft material. Use the **slide and say strategy**, saying the next number as you slide each object one-by-one onto the counting frame.

After completing the frame, ask students to share what they notice:  
5 is one more than 4.  
4 is one less than 5.  
6 is 2 more than 4.  
9 has three 3s inside it.

What is a quick way to make 4? Push the

objects around within the 4 column: "2 and 2, 3 and 1." What are the ways to make 6? "3 and 3, 2 and 4, 4 and 2, 5 and 1, 6 and 0."

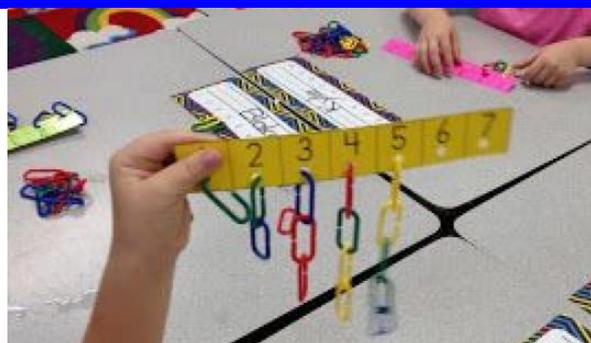
Ask students to raise their hand each time they complete a set of objects, then share 3 new things they notice with you, before being permitted to switch to a new type of craft object. If your class or particular students enjoy competition, students could tally a point for each completed frame, aiming to score 5 or 10 points by the end of the session.



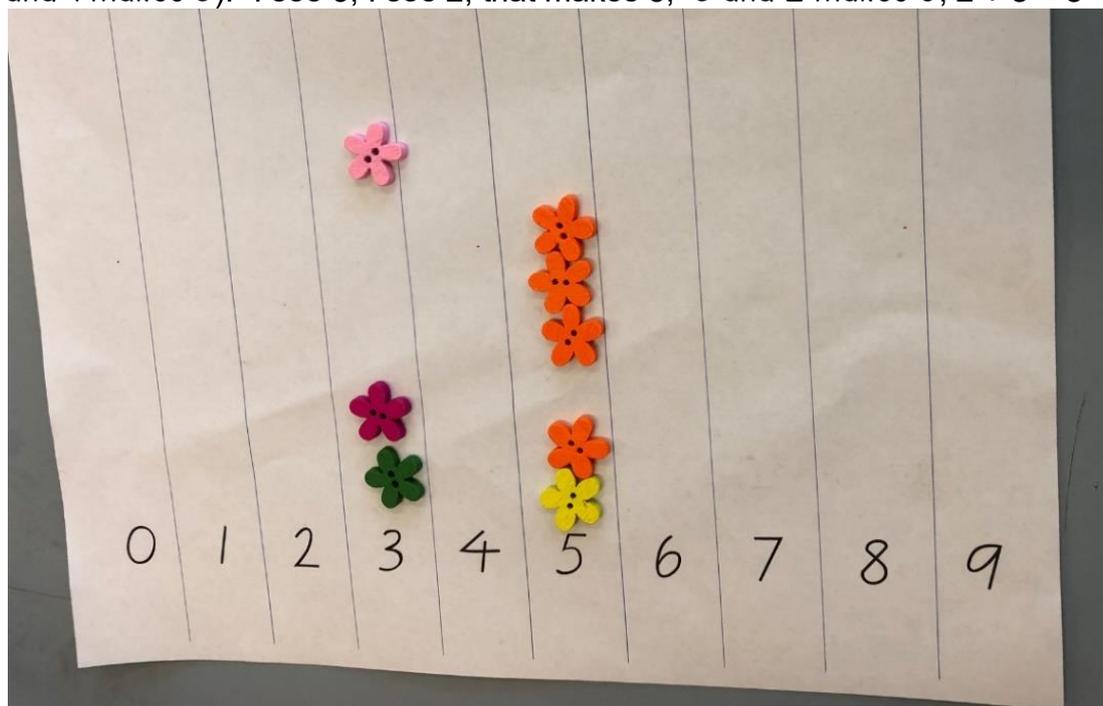
**Midway extra challenge:** Provide students with post-it notes to write the worded form of each number, placing these under each column. Use the [recommended desk charts](#) to provide spelling and literacy support.

**Support 1:** Use the support version of the [sequential counting templates](#). These include stars to highlight the quantity needed in each column.

**Support 2:** Use a sequential number line and counting clips, adding an extra clip to each number along the line. The template is in this unit's folder, which needs to be laminated and hole punched: [Sequential counting template with number line](#) (print 5 pages for a class set of 20)



**Extension 1:** Partition the numbers in each column, then write the matching addition number sentences. For example, "I see 2, I see 1, that makes 3" (2 and 1 makes 3). "I see 3, I see 2, that makes 5," 3 and 2 makes 5,  $2 + 3 = 5$



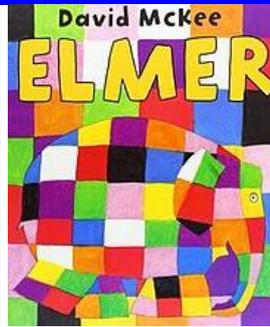
Write a subtraction number sentence for each column too:

"5 take away 2 leaves 3,"  $5 - 2 = 3$

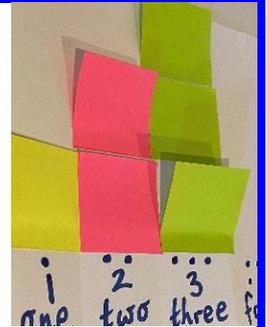
"3 take away 2 leaves 1,"  $3 - 2 = 1$

**Extension 2:** Take the objects out of each column and arrange that number in two rows. Practise counting by 2s. Which numbers are easy to count by twos and which are difficult (because there is one leftover at the end of your count)? The numbers with leftovers are called 'odd,' because there is an odd one out. The even numbers all have friends and are neatly arranged in pairs.

**Extension 3:** Make teen numbers as ten and some more using the [Sequential counting extension teen numbers version](#) from the unit's folder.



**Variation 1:** Read the story of *Elmer the Patchwork Elephant* by David McKee. Students create a patchwork version of the number, using small pre-sliced squares of coloured paper along a number line on an A3 page, or coloured post-it notes (shown right):

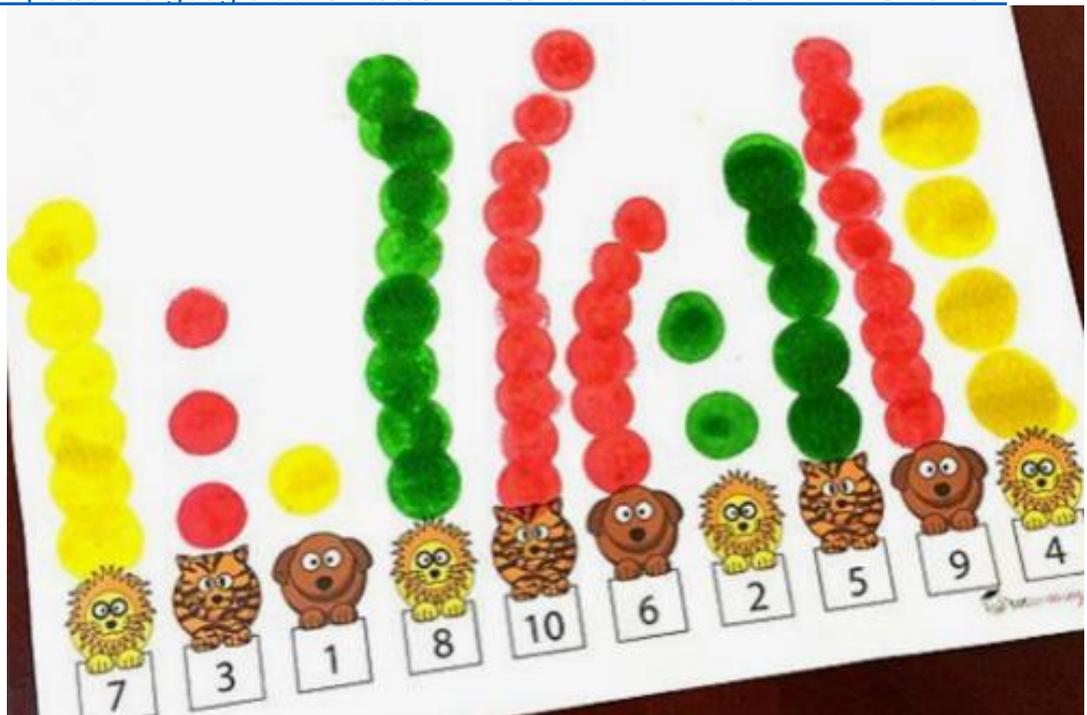


**Variation 2:** These versions could be used for formative assessment.

Read the story of *Ten Apples on Top* by Dr. Seuss. There is also a song version here: <https://www.youtube.com/watch?v=OB-5s02AsUU>. Students create a *Ten Apples on Top* [version](#) of the counting frames, using counters on top of the animals, or by fingerprinting on top of their heads.

The free downloadable template is available here

<https://drive.google.com/file/d/0B7HU0DcVrlesVHI2d3hTR2hES1k/view>:

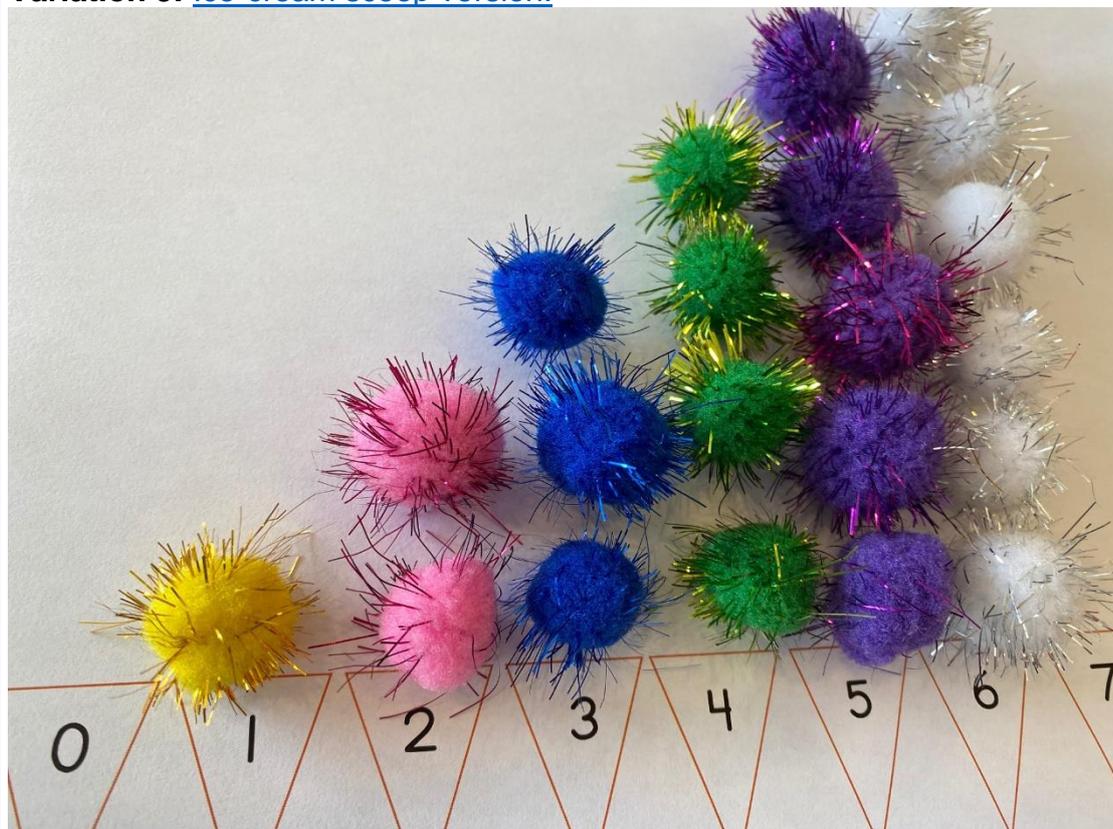


There are sequential and out-of-order versions of this template.

Version two of the template, also available as a free download

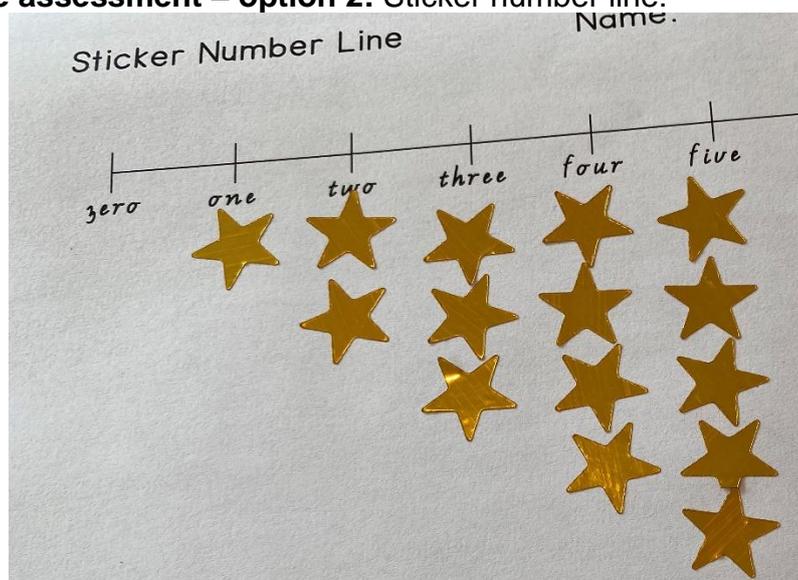
<https://drive.google.com/file/d/0B5dsPzSIPOCeNWJROGN5djJsWGc/view>, provides numbers in words, and less support without the circle cues for each quantity.

**Variation 3:** [Ice-cream scoop version:](#)



This is ideally used with pompoms. The [template](#) is in this unit's folder and works best when enlarged to A3 on the photocopier – [Sequential counting templates – ice-cream version.](#)

**Formative assessment – option 2:** Sticker number line:



There are two versions of this template, one with [digits](#) and one with [words](#) in this unit's folder – [Formative assessment 2: sticker number line.](#)

**Montessori versions of this lesson:**



Pull from a set of playing cards, place them in order until you have a 1 to 10 number line. Finally, make each number using blocks and craft sticks, as shown here:



**More Montessori versions – all made from cardboard:**



**Counting  
Lesson 15**

**Out-of-Order Bingo!**

**Learning intention:** Count each number up to 10 out-of-order using 'build and say'  
**Maths vocabulary:** count (build and say), how many, digit, word

**Games-based hook:** Play an interactive game of bingo using this link: <http://www.abcya.com/number-bingo.htm>.

**Literacy Link – Numeracy Picture Book:** Read *Ten Black Dots* by D. Crews.

Students can then mark each digit on their bingo template with the matching number of dots (2 dots on '2')



Template available [here](#)

**Lesson summary:** Students roll a 10-sided die, aiming to build number towers from 1 to 10, before their partner finishes all their own towers. The numbers on the gameboard are not in order as an extra challenge.

**Materials:**

- [Bingo gameboards](#) templates from this unit's folder – one per student.
- 10-sided die – one per pair.

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

Bingo!

0	1	3
2	4	9
5	6	8

**Modelling:** Model the bingo game against a student partner. Roll the 10-sided die and build that number as a tower on top of the matching digit on your [bingo board](#). If you roll a number you have already built, you miss a turn – bad luck! Ask students to keep a tally of the number of games they win at the bottom of their gameboard. Practise tallying with the class, "1, 2, 3, 4, and 5 shuts the door, 5, 6, 7, 8, 9, at 10 close the gate."

For extra points, students can try to record the [digit and matching word](#) for each number, drawing the tower in the drawing column of this template.

**Questioning:** Do you need to wait to roll zero to 'score' it?

**Lesson in action** – First term of school, so [sequential gameboards](#) were in use. The [recommended gameboards](#) are out-of-order, as an extra challenge.

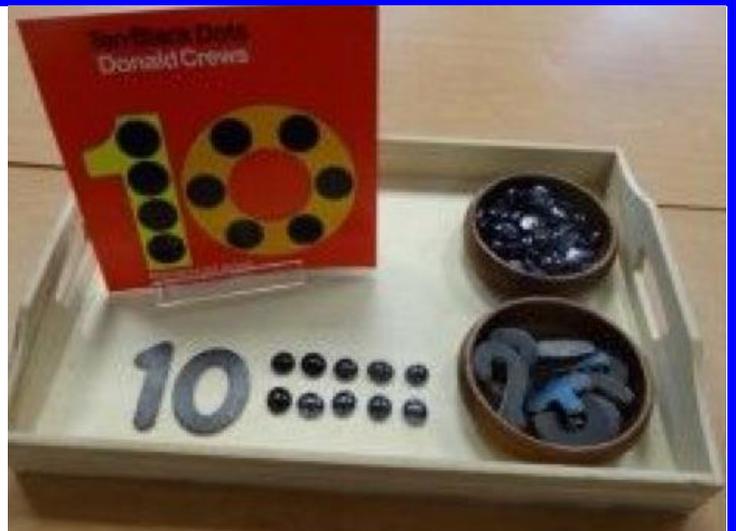


Visual modelling of tally marks using popsicle sticks

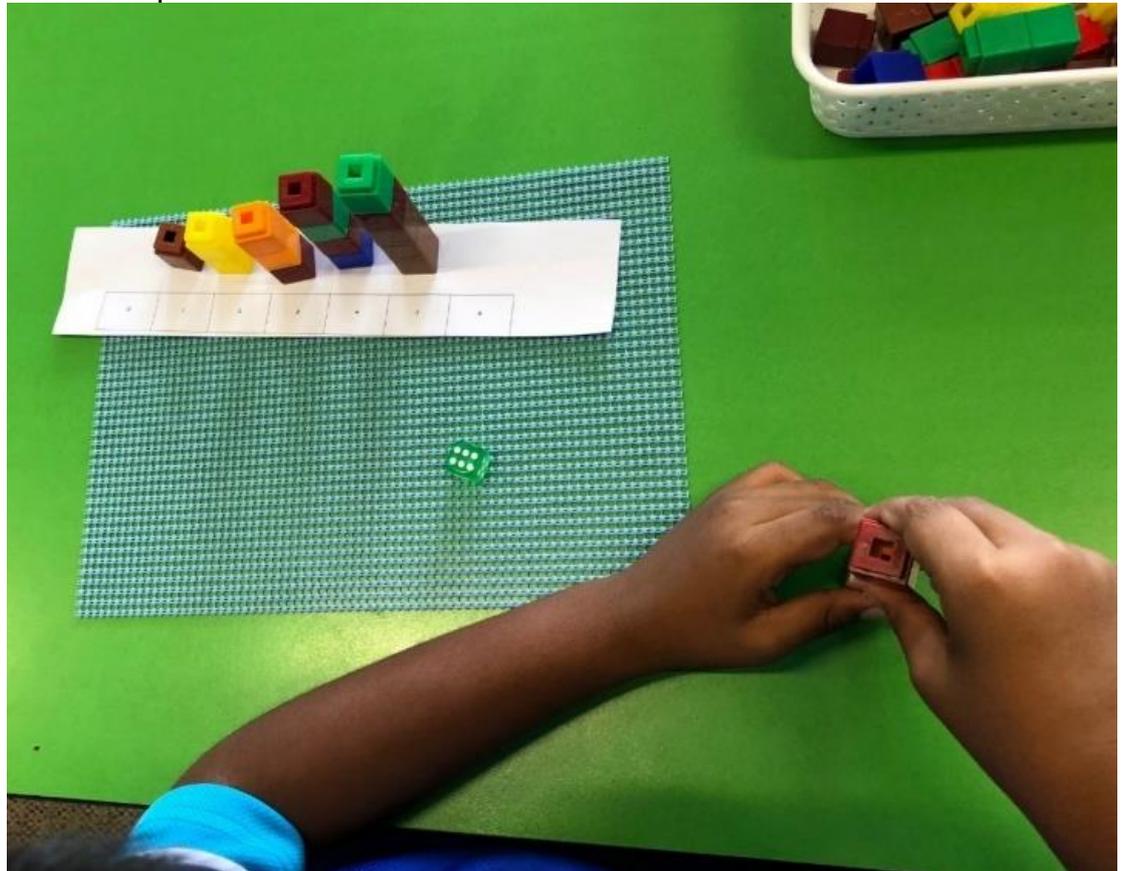
**Counting songs:**

Continue to use the counting songs from [Place Value Unit 1](#) for pre-warm-ups.

**Support 1:** Use counters and foam digits to remake each page of the book from this lesson's hook, *Ten Black Dots* by Donald Crews. Since this is a durable board book, send it home with your most at-risk support students, as part of their home readers, to practise counting to 10 each night of this week with parents.



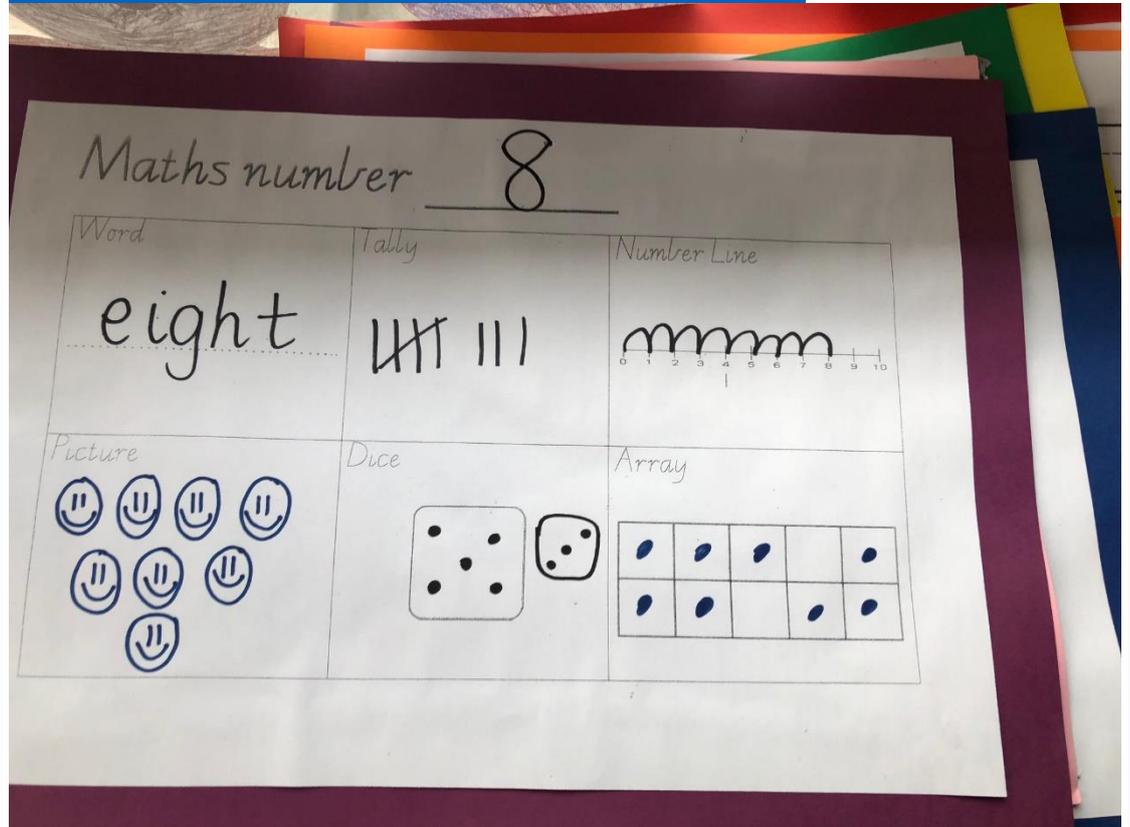
**Support 2:** Use the [bingo support version](#) gameboard in this unit's folder. These keep the numbers in order.



Sequential [0 to 6 version](#) from [Place Value Unit 2 Count to 3, then 6](#)

**Extension:** Roll two 6-sided dice instead of one 10-sided die. These students must score their numbers by recording addition or subtraction sentences in their maths books, not just by rolling that number. To increase the challenge, roll 4 dice and require that all 4 numbers are used in an equation that scores their desired number. For example,  $2 + 3 + 4 - 1 = 8$  to score 8.

**Formative assessment 3:** Allocate students numbers based on their current progress, and ask them to show their number in all these ways, using the [Formative Assessment 3 – show your number template](#).



**Formative assessment and link to shapes:** Use shapes to build a number that you pull from a deck of playing cards. Name each type of shape and the quantity showing. Later, make animals or characters out of the shapes.



## Counting Lesson 16

### Race to 10 Robots and Race to 10 Ladybirds

**Learning intention:** Show each number up to 10 on a ten-frame using counters, as well as the matching digit and word for that number

**Maths vocabulary:** odd (odd one out, like an odd sock), even (everyone has a friend, even lines), ten frame, digit, word, how many more

#### Sports-based

**hook:** Take students outside for a quick running race. Now, this maths session, you are also racing!

#### Literacy

**Link – Picture Book – ladybird version:**  
Read *The Bad Tempered Ladybird* by E. Carle.

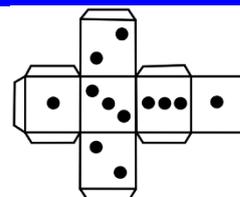
#### YouTube clips – robot

**version:**  
For the robot session, show students just how awesome robots have and will continue to

**Lesson summary:** Students race to make ten bolts on a robot or ten spots on a ladybird. After each turn, students record their running total as a drawing in a ten-frame format, and also as a digit and word using the race to 10 recording templates.

#### Materials:

- 3-dot dice (6-sided dice with only 1, 2 or 3 dots). These are custom-made by Top Ten in our Maths Toolboxes. If real ones are not available, use the [template 3-dot dice](#), or just scrunch post-it notes into a cup with 1, 2 and 3 dots drawn on each.
- [Race to 10 recording templates](#) from this unit's folder.
- **Gameboard templates** from this unit's folder – one per student:  
*Template 1:* [Race to 10 robot](#). Ideally used with bolts or washers from spare tool supplies (teachers' garages or the school handyperson).  
*Template 2:* [Race to 10 spots on a ladybird](#) (not in ten frame format), ideally used with counters placed on top of the dots.
- *Whole-class odd v. even circle modelling:* [Ten frames](#) from this unit's folder (pre-sliced) and two-sided counters in cups. A few pairs of socks for the whole-class teacher modelling.



**Best set-up:** Students work with their regular like-ability maths buddy.

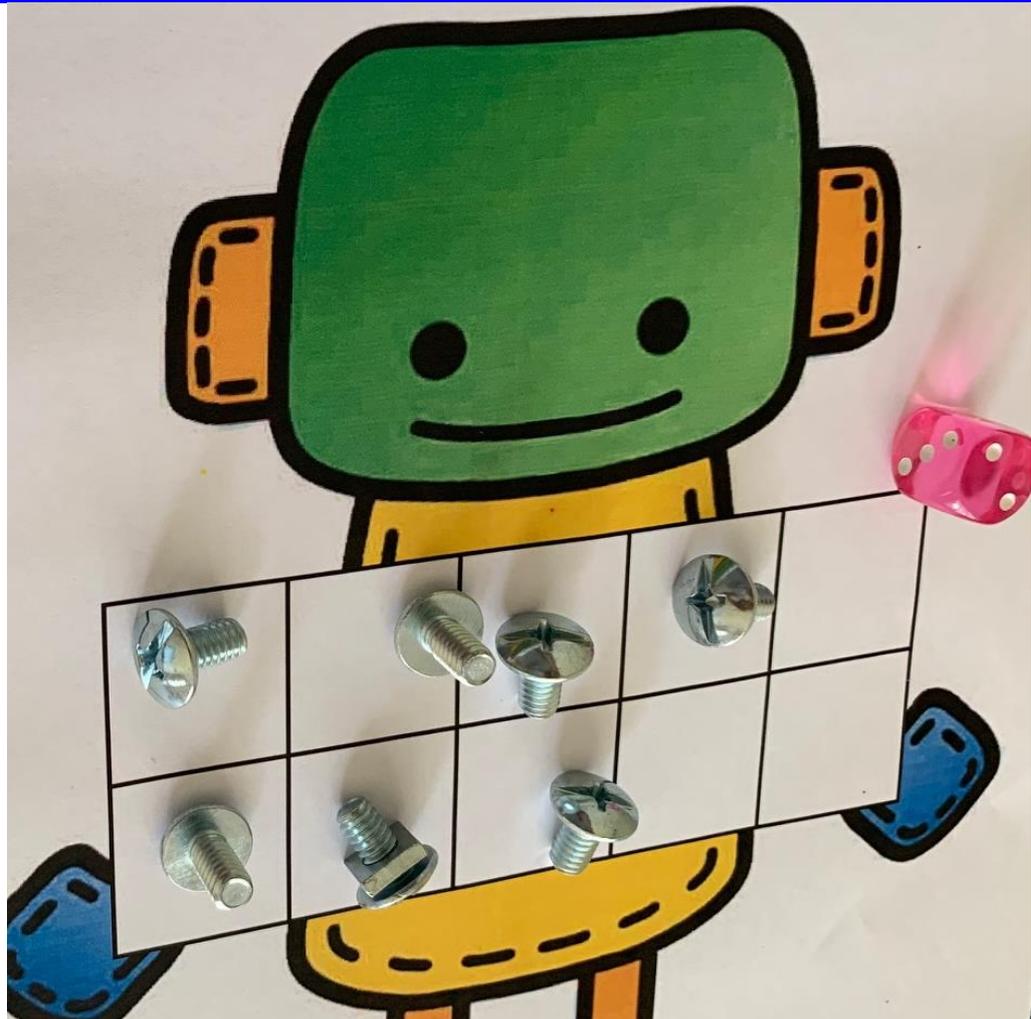
**Modelling:** First whole-class model relating to odd and even numbers (see a few pages below). Then model each game (*robot race to 10* during session 1, *ladybird race to 10 spots* for session 2) against a student partner, filling your own ten frames, as you take turns to roll the dice and race to ten against one another.

Emphasise the [recording](#) element of the session – instruct students that if they do not record with each turn, they cannot score a point for winning that round. Use your partner's turn to record – while they roll, you record. Watch your partner like a shark – if they have not recorded, they cannot roll their next turn.

#### Questioning:

- Is that number odd or even? How do you know?
- How many more do you need to reach ten and win?
- Who is winning at the moment? How did you work it out?
- What is the difference between your and their number?

become throughout their lifetime, including this robot fridge that can bring you drinks and food with a voice command only:  
[https://www.youtube.com/watch?v=mDTmK7gZhe8&ab\\_channel=TechInsider](https://www.youtube.com/watch?v=mDTmK7gZhe8&ab_channel=TechInsider)

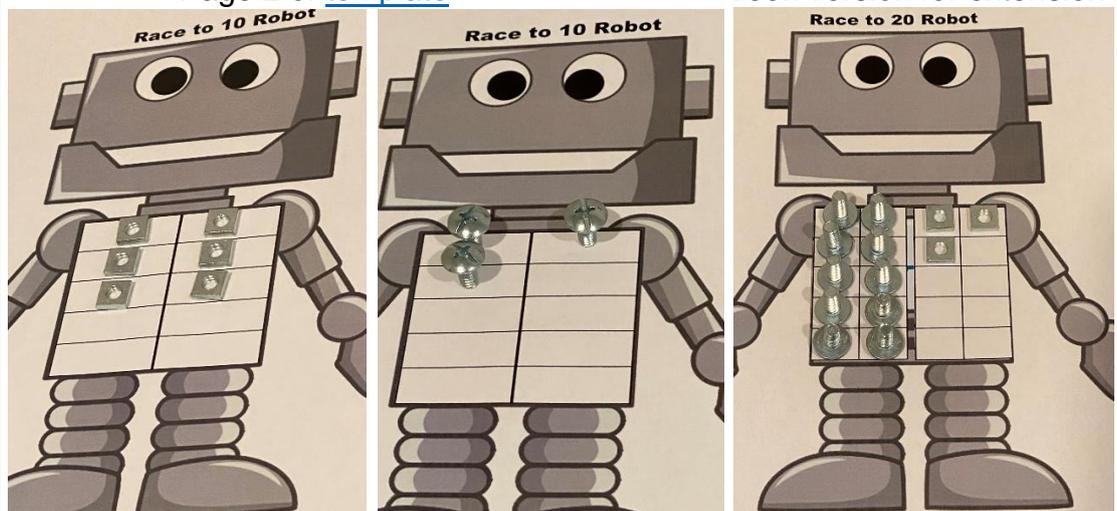


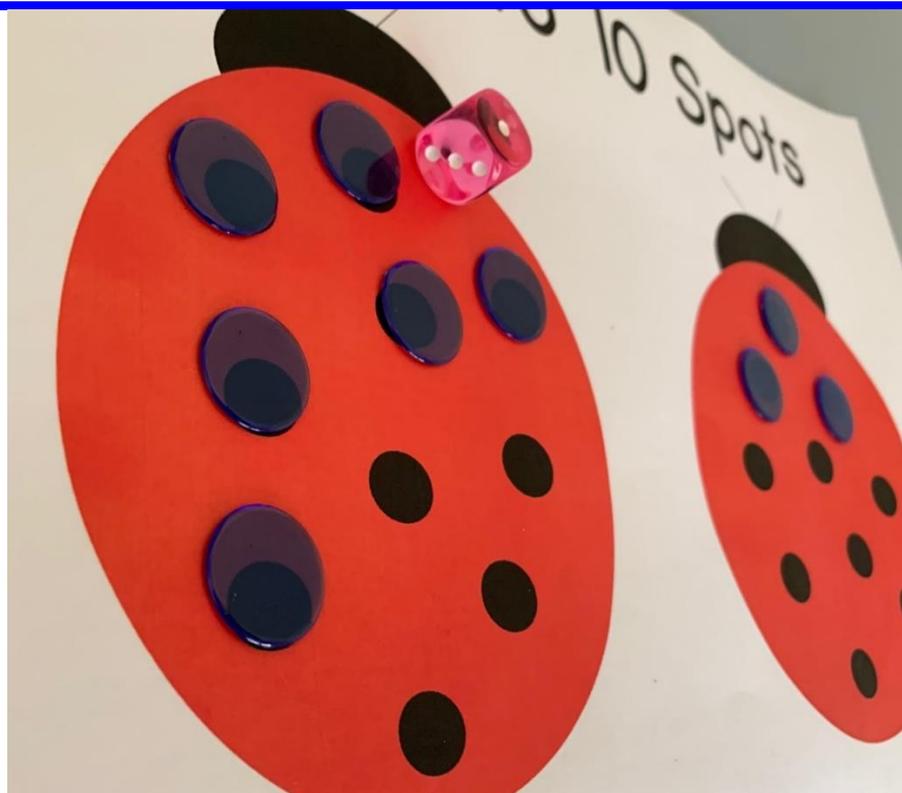
### Race to 10 Robots

Ideally used with cheap packets of bolts from Bunnings for heightened student engagement. [Robot template](#).

Page 2 of [template](#)

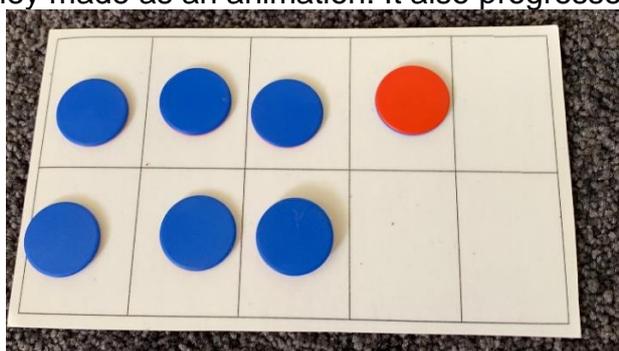
Teen version for extension



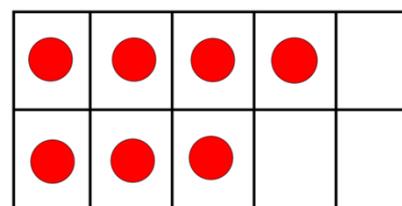


Race to 10 Dots [Ladybirds](#)

**Whole-class circle modelling focused on odd v. even numbers:** Students sit around a circle with a ten frame in front of them and a cup of counters. Use the [Making numbers PowerPoint](#) to practise making numbers, with students seeing the digit or worded form on the screen, then making it in their own [ten frame](#) using counters. The [PowerPoint](#), when used in slideshow mode, will provide students with immediate feedback on the accuracy of the quantity they made as an animation. It also progresses from digits to words.



Make 7



Emphasise for students to make lines of two (**not** fill the entire first row then the second row of their ten frame). The correct format is shown in the PowerPoint. This makes the connection to odd and even clear – Does everyone have a friend? 4 is even! It creates even lines, like even socks. Is there an odd one out, like an odd sock? 3 is odd, someone does not have a friend! Also, if there were 3 lollies, it could not be shared fairly between 2. Whereas, 4 lollies can be shared evenly between 2 friends.

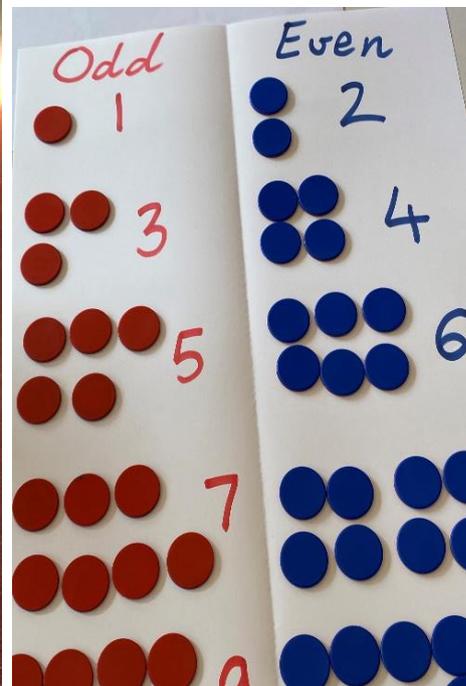
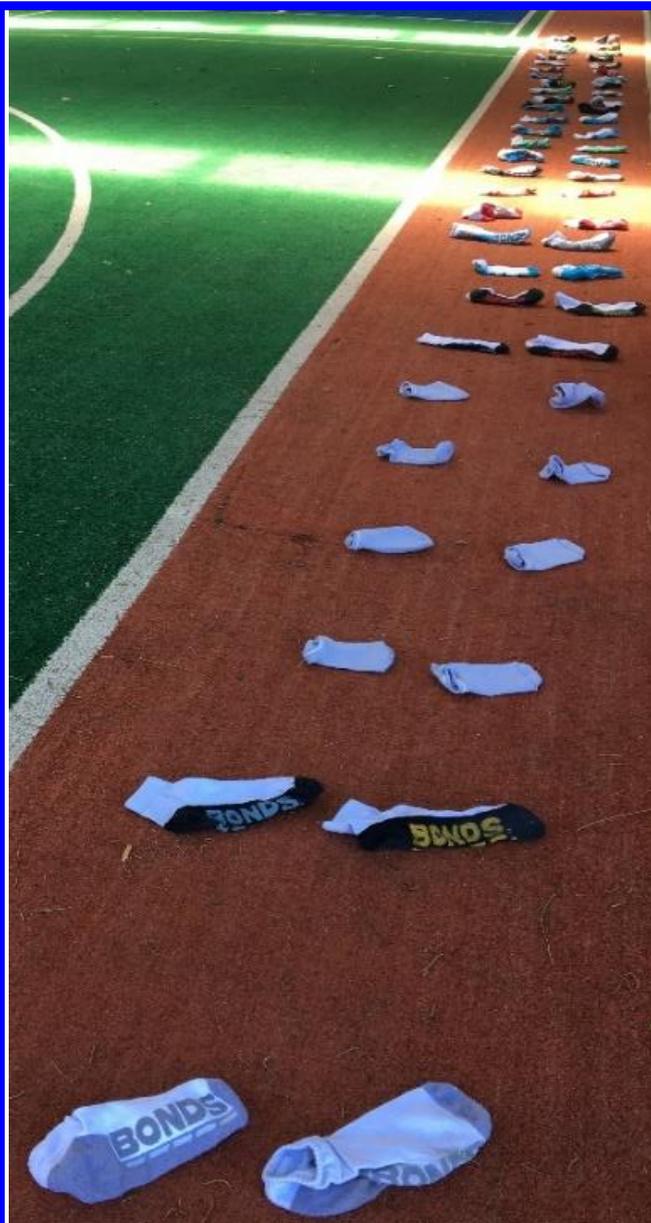
Also encourage students not to clear their frame for each new number in the [PowerPoint](#), but to think about using one more/less, two more/less connections. You already have 7 from the last slide, you need to make 8, what should you do?

Extension students can be given [two ten frames](#) and asked to make teen versions of the numbers, i.e. instead of making 4, make 14 (a full ten and 4 more). Always build the ten on the left (start filling it from the arrow on the [template](#)).

Bring in a few pairs of socks and use a giant A3 ten frame to visually emphasise the odd/even features of different numbers:



5 is odd, because 4 would create pairs but 5 means one foot has a sock and the other does not. You can share 4 socks evenly between 2 people, but not 5 – someone would receive an odd sock!



Also create a class anchor chart (shown above) demonstrating odd/even numbers in their ten frame formats. For teachers who are not great at drawing, stick materials to your anchor charts to make them pop.

**Support:** Remove the recording element, so long as students say the number out loud to one another after each turn. Colour over some of the ten frame for the robot, or delete some of the spots from the editable versions of the templates, to reduce it to a race to 7, or race to 5, or whichever total is most suitable for these students' points-of-need.

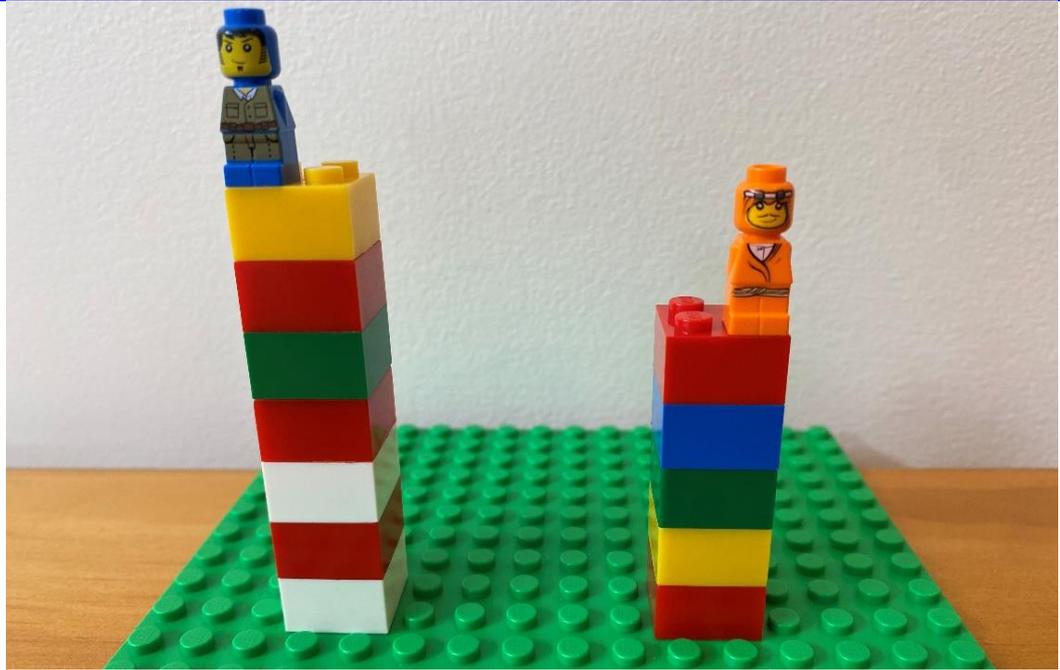
**Extension:** Use the robot race to 20 version (first page of the [robot templates](#)). Build from the left ten frame first, so that the appearance of the full ten frame on the left and the extra ten frame on the right matches the teen numbers – 1t and 6 more = 16, saying out loud, “1 ten and 6 ones makes 16.” Use the recording template on **page 3** of the robot template to show their running total with each turn. After each turn, record in red pencil on the recording template, how many more they need to reach 20. 14, **6 more to go**

**Variation 1:** Simply race along a [0-10 number line](#) against one another. Compare positions each turn – who is winning? Which number is larger? By how much? What's the difference between 7 and 4?



**Variation 2: Cross-content link to volume:** Race to fill the cup. Students score one point for winning, another point being the closest estimator to the actual total it took to fill the cup. Always estimate how many of the object it will take before starting to play.

Emphasise that the cup must not be overfull (students must be able to place their palm flat against its top without knocking over a block). However, the cup must also be full (partners need to be able to gently push the blocks down and still not fit another one under its rim). Then change cup sizes (or the type of objects they are using to fill it – such as pompoms, instead of cubes) with another pair who have finished their race, re-estimate and repeat.



**Variation 3:** Lego tower race game – first to a tower of 10, 15 or 20 wins.

**Reflection:** Continue to classify numbers as odd and even using the less supportive format of playing cards. Students work in pairs. Student A pulls a playing card. Student B makes that number on the ten frame using the two rows, based on the [whole-class circle modelling](#) at the start of the session. Both students decide whether the number is odd or even, then place it in the T-chart of the [Odd and even template](#) in this unit's folder.



When considering whether it is odd or even, think about if the counters were hard-boiled lollies, could they be shared fairly between the two partners, or would one partner get more than the other? Does each counter have a friend, or is there an odd one out?

## Counting Lesson 17

### Mystery Card Counting

**Learning intention:** Count up to 10, with numbers out of order, using 'tap and say.'  
**Record the matching the digit and word for each number.**

**Maths vocabulary:** count (touch/tap and say strategy), how many, digit, word

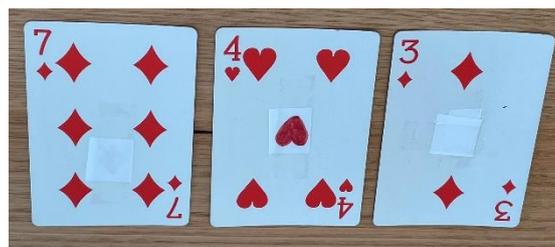
#### Literacy link and challenge for the students:

Tell the story of *Willy Wonka and The Chocolate Factory*. A few golden tickets were hidden in Willy Wonka's chocolate bars at random. Just in the same way, I have hidden a few cards in your deck of playing cards, which do not have the correct number of symbols on them! See if you can find them...

**Lesson summary:** Students count the large symbols on each playing card, aiming to find 'mystery cards' that have been hidden in their decks, which have an incorrect number of symbols on them.

Obviously, these 'incorrect' or 'mystery' cards do not exist (students who think they have found one have miscounted, which is then ideal for immediate teacher feedback to observe their recount of that card). However, you need to convince the students that they are 'hidden' in the deck.

**Alternatively, use white paper with sticky tape to make a few actual 'mystery cards,' as shown here:**

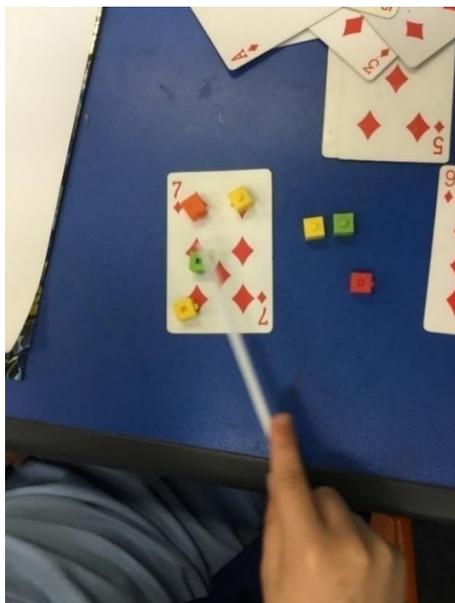


#### Materials:

- Deck of playing cards for each student or pair.
- Counters or small blocks to count the symbols as they add them to the cards one-by-one.
- Counting sticks.
- *Optional:* [Mystery card recording](#) template from this unit's folder.

**Best set-up:** Run the *Willy Wonka* hook, convincing students these 'mystery cards' are hidden in their decks. Students work with their like-ability maths buddy or independently, aiming to find the mystery card before anyone else!

#### Lesson in action



Neither of these are mystery cards, because the '7' card is showing 7 symbols, and the '8' digit card is showing 8 hearts. A mystery card would be showing a different number of symbols to the digit; for example, '7' as the digit, but only 6 large symbols.

### Counting songs:

Continue to use the counting songs from [Place Value Unit 1](#) for pre-warm-ups.

The mystery cards can be created with whiteout tape, white paper with sticky tape (shown here), or similar. Here, white paper has blocked out 1 symbol on the '7' card and '3' card, while an extra heart has been added to the '4' card.



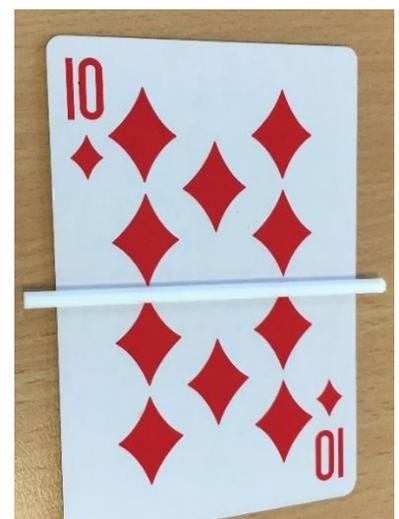
**Modelling:** Model counting the symbols on the playing cards, using the 'touch and say' strategy, emphasising to count only the large symbols (not the mini symbols on the playing cards). Remove picture cards from the deck. For extra assistance, students can add counters or cubes to the card, using the 'drop and say' strategy, saying the next number as they drop one block at a time (as shown in the lesson in action photos from the previous page).

**Formative assessment built into the task:** This lesson is rich in formative assessment in that whenever a student or pair raises their hand to alert you that they have found a 'mystery card' with the incorrect number of symbols (the digit does not match the symbols), it will mean that they are alerting you they have miscounted. Therefore, you will only be called to assist students who have made a mistake, while other students are busy counting very carefully to find the 'mystery card.' Obviously, at the end of the lesson, let students know you were just tricking!

**Student recording:** Ask students to use the [template](#) to record all the cards they count using a drawing, digit and the word for each number (with a supportive anchor chart at the front of the room), prior to counting the next card. Use the [mystery card recording templates](#). "If you find the mystery card, but you haven't recorded all the other cards you counted first, it will not count!"

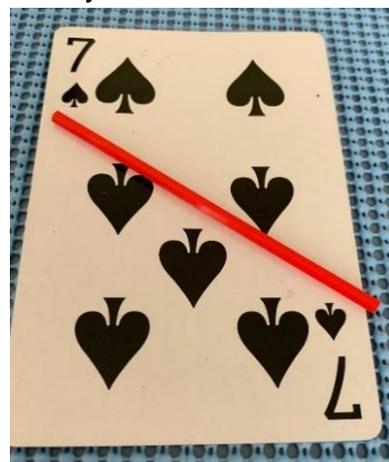
### Questioning:

- Can you just see what is on the card straight away, without counting all the symbols one-by-one? This starts to build subitising (seeing without counting – using your 'maths superhero eyes') and partitioning skills (all the ways to make a number).
- Can you use this stick to help you see what is on the card? For example, break the 10 card into 5 and 5, to see the numbers as they appear on the dot dice.



**Support:** Consider 'cleaning' a deck of cards for them that only contains number cards to 5.

**Extension:** Emphasise subitising and partitioning, not one-to-one counting. Explain out loud, to their like-ability partner, exactly how they saw each number and listen to how their partner saw it differently. For example, “I saw this 7 as 5 and 2,” whereas their partner may say, “I saw this 7 as 4 and 3.” Use counting sticks to show one another how they saw the cards with their maths superhero eyes, as shown here:



**Reflection game:** Just pull the playing cards from an upside-down deck (no counters involved), aiming to make a complete number line from 1 to 10, before your partner does the same. Always put the smaller/lower numbers on the left, and bigger/larger on the right – just as we read books and write on paper from left-to-right. Be careful with your spacing, where should 5 go? Where would you put 3, is it too close to 1, because you need space for 2?



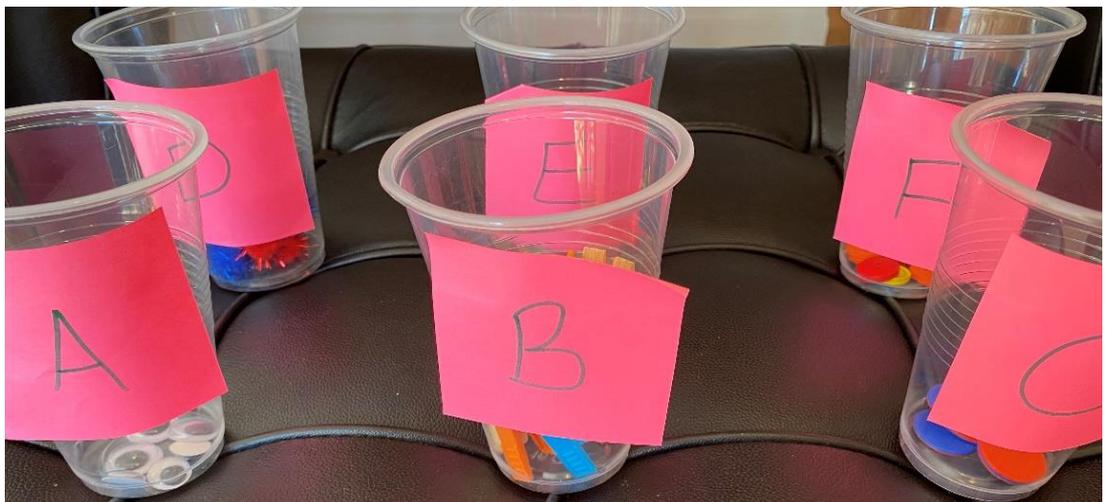


**Variation:** Create a collection of small tubs, labelled A to Z, with a different number of objects in each. Designate a 'mystery number of the day,' such as 9. Students aim to count the contents of all tubs, figuring out which tubs are the 'mystery ones' that contain the number of the day, and keeping this a secret by jotting down the quantity beside each letter, until whole-class share time. [Recording template:](#)

Counting Containers Name: \_\_\_\_\_

A	N	
B	O	
C	P	

Place one tub on each desk, with students engaging in a *gallery walk lesson structure*, counting one tub at a time, then returning its contents to the jar without concealing the answer to any other classmates.



**Variation:** Estimation cups. Estimate the number in each, then tip out and count. Also run this as a gallery walk, with students visiting one desk at a time, which ensures that preparing 30 will keep students engaged for about two sessions.

## Counting Lesson 18

### Counting Mats – Progressive Series of Lessons

**Learning intention:** Count to 10 using 'build and say.' Record the matching digit and word for each quantity.

**Maths vocabulary:** count (build and say), how many, quantity, digit, word

#### Counting songs:

Continue to use the counting songs from [Place Value Unit 1](#).

#### For set 1:

Share class stories about seeing worms and snakes in real-life.

#### For set 2:

YouTube clip of some of the coolest and largest kites in the world: <https://www.youtube.com/watch?v=87NIC35Psw8>.

#### For set 6:

[Lego hook images](#) from this unit's folder.

#### For set 7:

Read *Ten Apples on Top* by Dr. Seuss.

**Lesson summary:** Students use counting mats to build their fluency in counting from 1 to 10 using a wide range of different materials. This session could be set up with different materials on each group desk, with students rotating to different counting centres every 10-15 minutes.

#### INSTRUCTIONS FOR EACH SET

- **Set 1 – Snakes and Worms** (*Worms template is a free download from Prekinders website: <https://prekinders-wpengine.netdna-ssl.com/wp-content/uploads/2015/02/worms-playdough-mats.pdf>*): Use counters for the snakes version. Use Play-Doh for the worms version.
- **Set 2 - Kites**: Hole punch these and loop around a pipe cleaner. Use clothes pegs or beads to count the matching number onto each kite.
- **Set 3 - Mice**: Hole punch these and loop around a pipe cleaner. Use beads along the tail to count the matching number.
- **Set 4 - Cupcakes (worded forms) and Teeth**: Use mini marshmallows or white pebbles as teeth. Use sprinkles or small counters as cupcake decorations. *Morale of the story:* Teeth fall out from too many treats.
- **Set 5 – Bug jars**: Use with bug counters. Emphasises worded form.
- **Set 6 – Lego counting mats**: Use with Lego or blocks. Pre-slice the cards on page two of this template. Students pick a word card, find the digit and make that number in Lego pieces.
- **Set 7 – Fish and apples**: Finger paint then decorate with fine liners, as in the final photographs on the next page.
- Autumn counting leaves by <http://www.123homeschool4me.com> at [https://drive.google.com/file/d/0Byr\\_Cmyf5\\_RyZVdZUmx2d1BJVWs/view](https://drive.google.com/file/d/0Byr_Cmyf5_RyZVdZUmx2d1BJVWs/view)

**Best set-up:** Fishbowl model, then students progress through multiple counting mat sets within each lesson; students start at their point-of-need.

**Modelling:** Emphasise using the 'tap and say' or 'slide and say' counting strategy, depending on which is more appropriate for the different centres set up around the room. **Questioning:**

- What is one more? What is one less? Can you put the mats in order?
- Is that number odd or even? Arrange it into two lines to check.



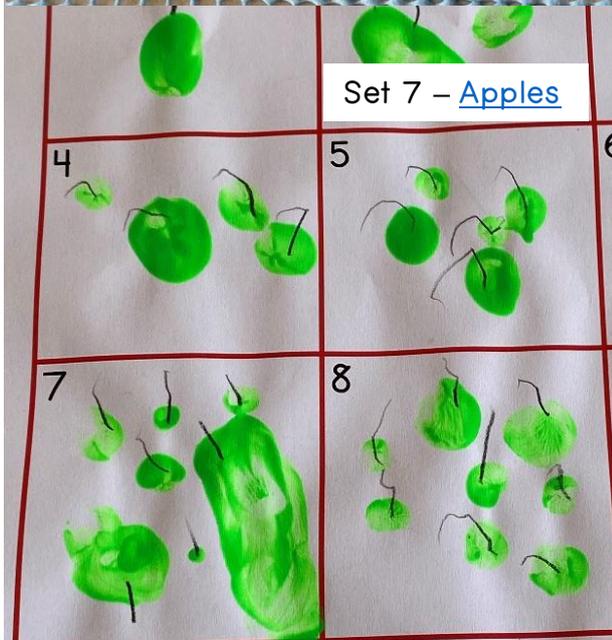
Students could also be asked to show each number they make with the counting mats using an abacus as well. Draw and record the matching digit and word for each number mat in a [recording template](#).



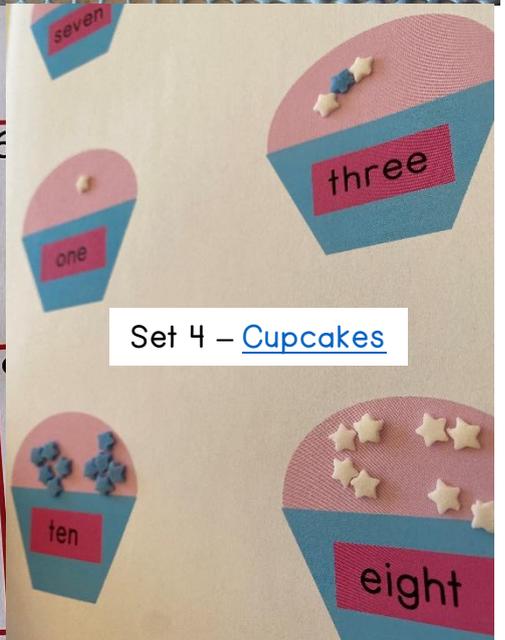
Counting mats student work samples



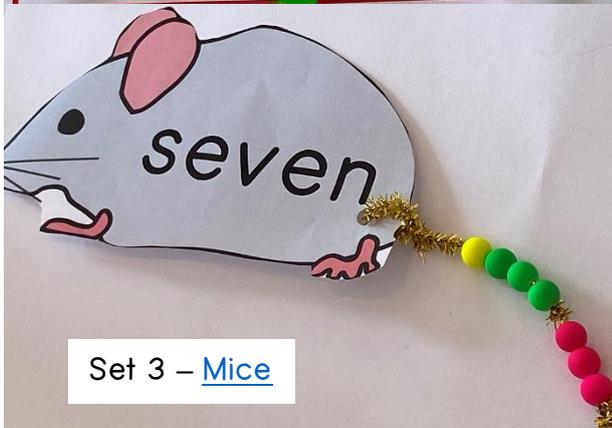
Set 2 - [Kites](#)



Set 7 - [Apples](#)



Set 4 - [Cupcakes](#)



Set 3 - [Mice](#)



# Counting mats student work samples

Set 5 – [Jars](#)

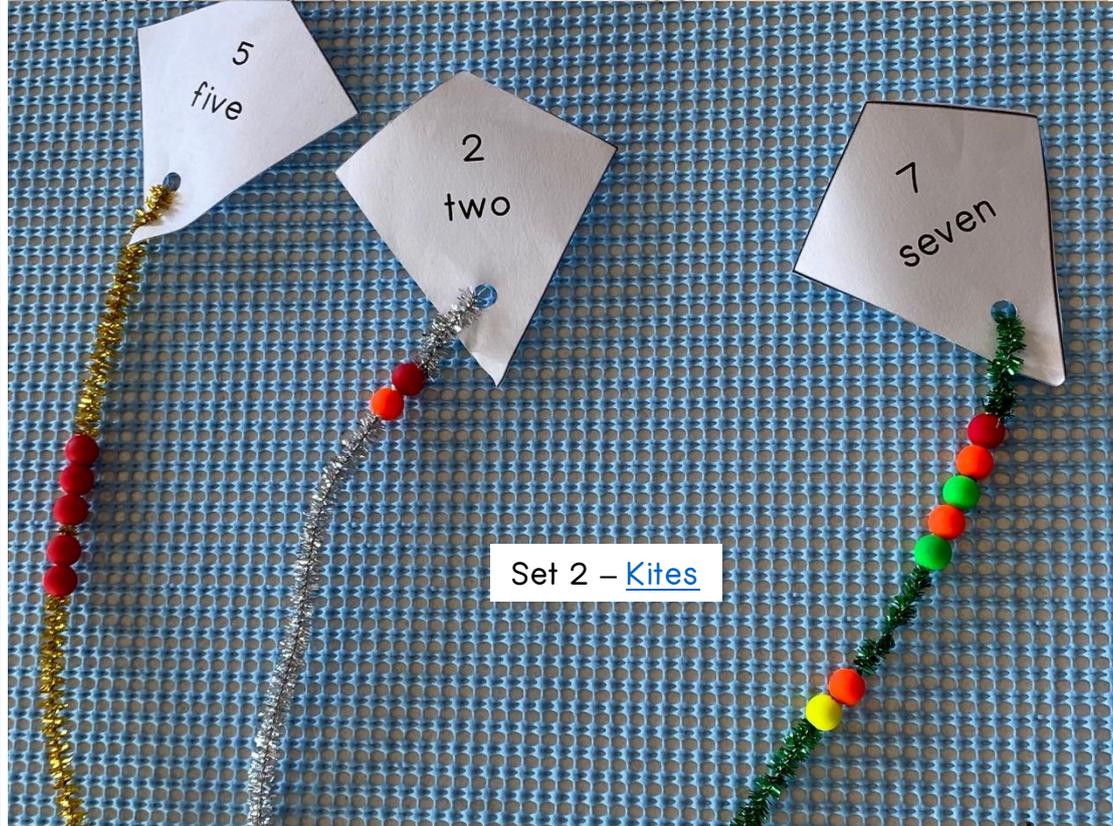


Extension version of the jars – recording all the ways to make that total





Set 1 - [Snakes](#)



Set 2 - [Kites](#)



Set 4 - [Cupcakes](#)



Set 6 - [Lego](#)

**Support:** Use counting mats that go 1-2 beyond of their current maximum counting range. For example, if the student can count to 5 but not 6, include numbers 1 to 7 in their counting mat sets.

**Extension:** Use a [120 chart](#) alongside a like-ability partner. Grab big handfuls of items. Put them into a transparent cup or bag. Estimate the volume in the bag or cup. Explain 'estimate' to students as a thinking guess. Write their estimate down, which ensures students have actually committed to an estimate (before counting). Then tip out the objects from the cup or bag, counting them one-by-one as they are placed into each sequential square on a 120 chart. Record the actual total and their estimate, working out whose estimate was closest.



As an extra challenge for very high extension students, work out the difference between their estimate and the actual total, using the 120 chart to help by working out how many tens (rows) and ones (single squares) they would need to jump to get from their estimate to their total. This is called the 'jump the difference' strategy, and is an excellent alternative to the vertical algorithm for subtraction as it is a mental strategy. For example, their estimate was 45 and the actual total was 62. Place counters on both numbers. Use a mini figurine to jump the difference:



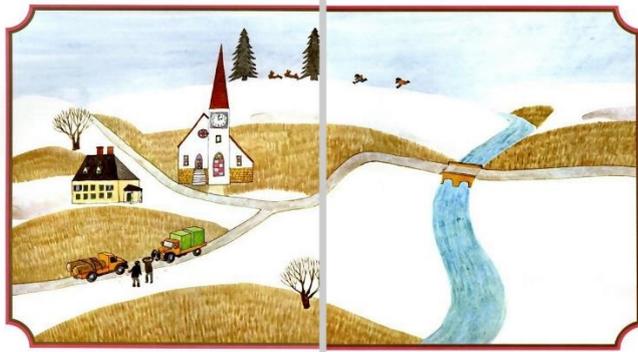
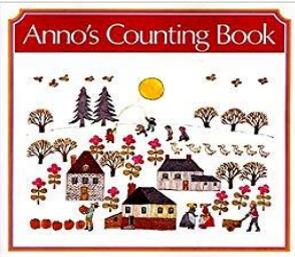
2 tens forward



3 back, so the difference is  $20 - 3$ , so 17

The difference between 62 and 45 is 17.

**Quick formative assessment – number artwork:** First, read *Anno's Counting Book* by M. Anno. This is a masterful depiction of different numbers; however, you may need to photograph and project each page for the class to truly appreciate the illustrations of each number, in all the ways it is shown. The book also time-travels through the four seasons across the twelve months of the year, as a town develops from nothing to a thriving community.



Following this, give each student a blank piece of A4 paper. Ask them to draw a valley, like where the town was located. Now, draw 5 horses. Draw 2 houses. Draw 7 trees. Draw 4 ducks. Write the matching digit and word next to each part of your drawing.

The next day, start with a fresh piece of paper. Ask students to draw the waves of the ocean. Now, draw 2 large sharks. Draw 10 small fish. Draw 5 clouds. Draw an island with 7 shells, and so on. This will be particularly engaging for your artistic students.

Alternatively, each pair of students could create a page of a class version of the book, allocating the most appropriate number for each pair:



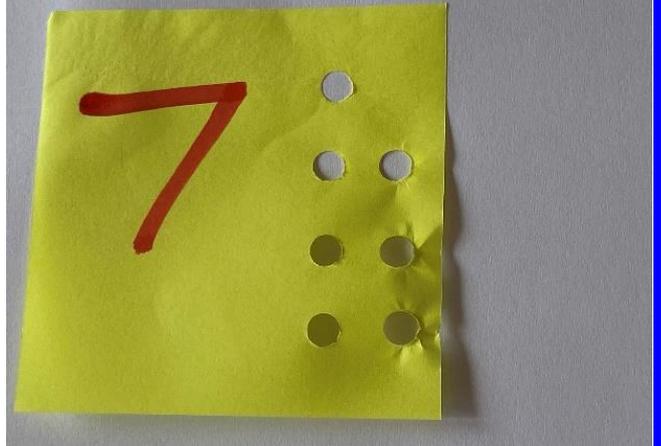
Staple into a whole-class book for reading aloud and for students to take home to share with parents for one night each.

**Quick formative assessment  
– egg crack, or post-it note  
punch:**

Give students some paint sample cards, or even just post-it notes.

Students use mini hole punchers to make the appropriate number of holes in each card. An alternative to mini hole punches (if unavailable) is just using a texta or marker to create dots, like a dot painting for each number.

Students could also write the number as a word.



## Counting Lesson 19

## Number Shake

**Learning intention:** Investigate whether the volume of something (the number it is holding) changes when it is shaken or moved. Count each quantity using a ten frame and decide whether it is odd or even.

**Maths vocabulary:** volume, total, count (tap and say), quantity, ten frame, odd, even

### YouTube

**hook:** Learn how to do a magic trick where a number does change when shaken by a magician (or by you, if you practice the trick hard enough):

[https://www.youtube.com/watch?v=QsL0hqwLe38&t=16s&ab\\_channel=XCM](https://www.youtube.com/watch?v=QsL0hqwLe38&t=16s&ab_channel=XCM) or [https://www.youtube.com/watch?v=hlWiVIEhgEl&ab\\_channel=DisturbReality](https://www.youtube.com/watch?v=hlWiVIEhgEl&ab_channel=DisturbReality)

**Lesson summary:** Students count as they drop items into a cup or bottle. Then the student covers it with their hand or a lid, and shakes the cup. Tip it out and check to see if the total changed, or stayed the same.

### Materials:

- Transparent recycled bottles (ask students to bring one from home in the lead-up to this session), or transparent cups.
- 10-sided dice – 1 per student.
- [Ten frame and odd v. even recording template.](#)
- [Ten frames.](#) Pompoms.

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

**Modelling and questioning:** Put 3 pompoms into a transparent bottle as the class counts. **Volume** means how many are inside it. What is the volume of this bottle? 3.

Ask the class, with no hint in your tone of voice, if you shake the bottle, will there still be 3 in here? Take an eyes-closed class vote. Shake it, tip it out and ask a student to count the objects in a ten-frame to check there are still 3.

Record the number [ten frame and odd v. even recording template.](#) Repeat, but with the 3 pompoms in a non-transparent cup. Do some students change their opinions when the container is not see-through?

Repeat both processes with 5, 7 then 10 pompoms. Do some students change their opinion when the number of objects increases? Many students can conserve 3, but when the number of items is beyond that or when the container is non-transparent, they cannot conserve it, and so they think the total will change when moved.

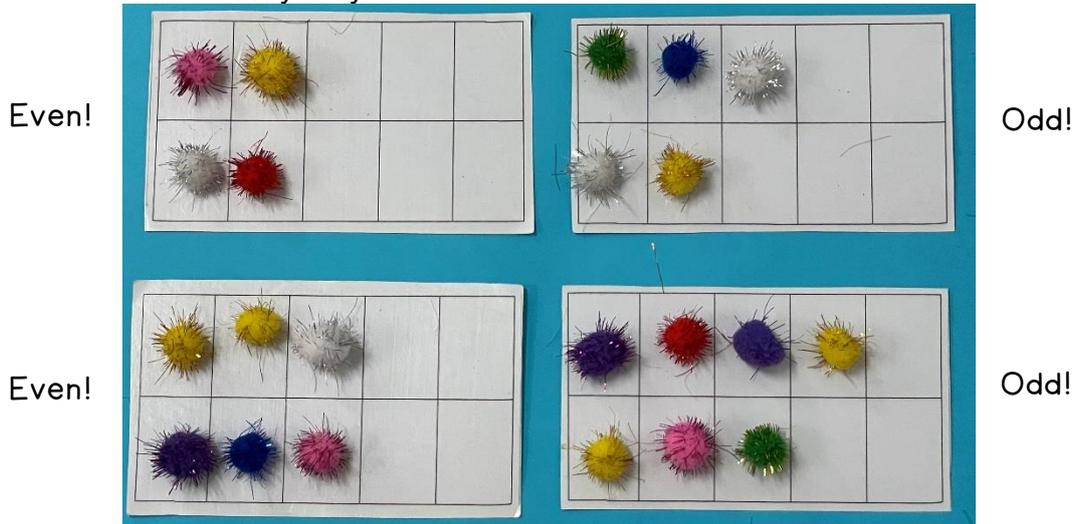
**Student work:** Students then roll a 10-sided die, placing the rolled number of items into their bottle. Then predict whether or not the volume will change if shaken. Shake and tip out to test whether the total changed. Students could label each container they complete with a post-it note, if there are sufficient quantities in the room. Otherwise, simply tip out and repeat with a new rolled number.



**Big question:** Does the total or volume inside something change when it is shaken or moved?

This lesson is about conservation and pushing students' maximum range of conservation, as well as continuing counting practice in the ten frame formats of numbers, which provide links to the odd and even characteristics of numbers below 10.

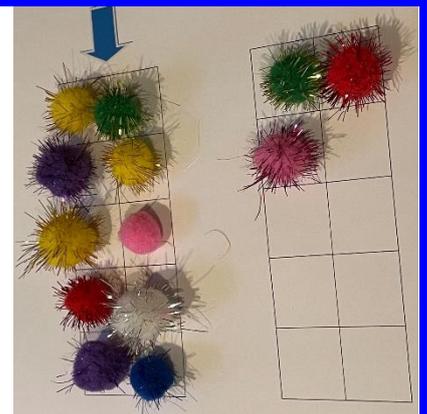
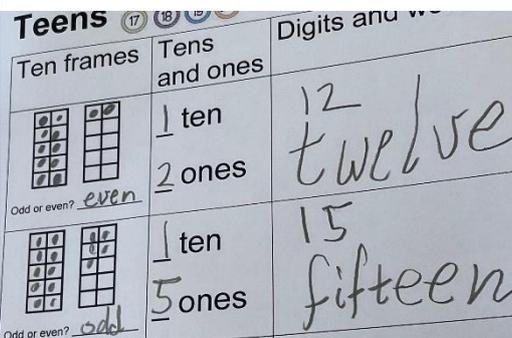
Ensure that students set up their numbers in lines of two so that the odd/even connection is visually very clear.



**End-of-session reflection:** If I wobble your arm, or jiggle your ear, does your name change? No! It's the same for numbers, no matter how much you move around the parts of a number, it remains the same total, or the same volume inside the container. Make a massive example with a bag of balls from the P.E. storeroom, shaking it around and wobbling the balls. Tip out and move around the balls on the floor, recounting from different starting points (let's start counting from the left, from the right, from the middle) – it is always the same total!

**Extension 1:** Shake larger collections, including teen numbers. After shaking each teen number in the bottle, count them using [two ten frames](#) to emphasise '10 and some more' for the teens. Start building from the left ten frame, as per the

arrow that highlights this on the template.



Record each number by drawing it in the ten frames, and recording its standard, worded and place value form using the [extension](#)

[teens recording template](#). Use the [spelling assistance chart](#) for help with the worded forms – [cursive](#) and [stick and ball fonts](#) available.

**Extension 2:** Drop a large number of pom poms into the bottles (above 30) and run an estimation contest against a like-ability extension partner. Count either using multiple [ten frames](#), or by placing the pompoms on a [120 chart](#).



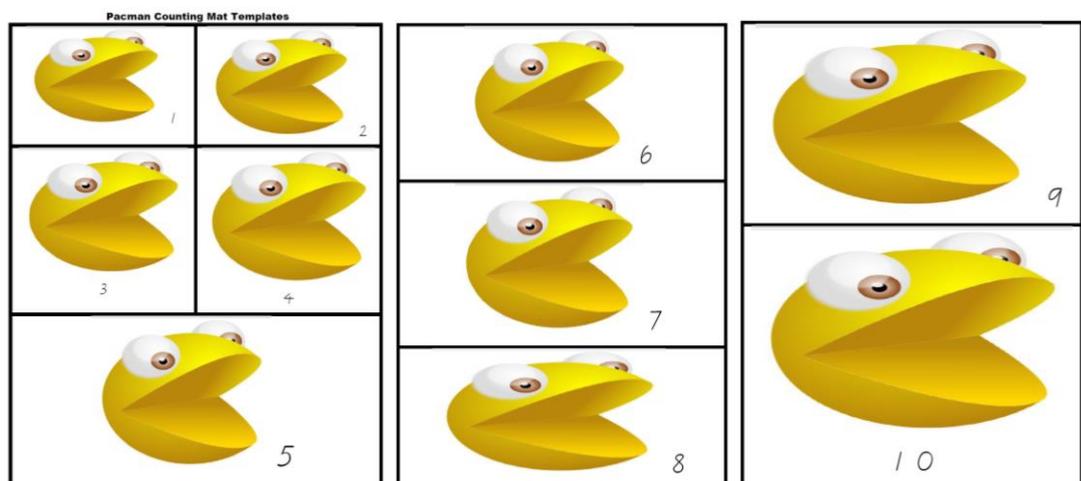
**Formative assessment option 4:** Play this interactive version of Pac Man to show students that the Pac Man monster loves eating circles, including circular counters:

<http://www.echalk.co.uk/amusements/Games/pacman/pacman.html>

The [template](#) for this formative assessment counting mat is in this unit's folder. Students place the matching number of counters into Pac Man's mouth to 'feed' their pet monster. Students can also write the worded form of the numbers in the rectangles, or on post-it notes.

This can then be used to determine the different counting mat templates to allocate to students across your class, based on their progress so far and current points-of-need, in the lesson that follows. It may be that your class as a whole do not need any sessions using the counting mats, or that they need multiple repeated sessions, plus repeats of previous lessons, to consolidate their counting to 10 skills, and matching digits to quantities to words.

Some students may only need practice at the worded forms of the numbers, which some of the counting mats target during the next lesson, while others may need more practice counting beyond 3 or 5.



## Counting Lesson 20

## Exercise Counting

Learning intention: Count to 10 and beyond  
Maths vocabulary: count (do and say)

### Excite the students:

Who likes sports?  
Who likes getting outside?  
Who likes hopscotch and skipping?  
We are going to practise our counting using all those fun activities today!

**Lesson summary:** Students perform a range of very kinaesthetic activities to practise counting.

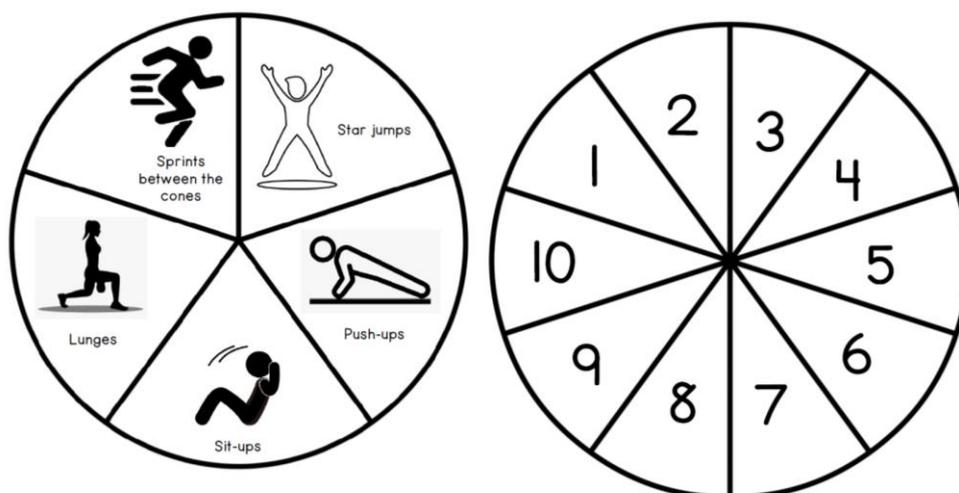
### Options for activities include:

- Skipping ropes – count for each successful skip, how high can you get?
- Hoops to perform the number of jumps that is written inside each with chalk. Hopscotch with chalk as well (if there are no permanent hopscotches around the school already).
- Bean bags to aim at number targets written in chalk as words and digits.
- Running laps between cones. How many laps can you run before the sand timer runs out?
- One partner attempts a balance beam, the other counts, “1 cat and dog, 2 cat and dog, 3 cat and dog.” Then switch roles.

**Best set-up:** Students rotate to each exercise counting station in pairs. By setting up about 10 stations, you will maximise the practice time for students, rather than students rotating in large groups of 4 or 5, which will result mostly in students waiting around for much of the lesson.

There is also an [Exercise counting template](#) in this unit's folder, which students can spin to decide their movement type and the number of times they need to perform it. Makeshift spinners can be created with students holding down a pencil inside the loop of a paperclip, then flicking or pushing the paperclip around the held down pencil tip. If there are difficulties with finer motor skills, one student can hold the pencil, while the other gives the paperclip a push.

# Exercise Counting



**Modelling:** Call out instructions for students to follow, for example:

- 1 spin
- 2 hops
- 3 claps
- 4 knee lifts
- 5 sideways steps to the right (always use *their* right or *their* left and face your back to the group so *your* right or *your* left is the same for this action)
- 6 lunges (long steps forward)
- 7 squats (bend your legs into a sitting position with a straight back)
- 8 supermans (lay on the ground and stretch out like you are flying)
- 9 curls (lay on your back and curl your body up into a ball)
- 10 jumps
- 11 stomps, and so on.



Count along as we skip

All students must be counting out loud, as they perform the actions, so that you can hear this and target focus students as you roam. Incorporate a brief pause after each action for the students to write the number down as a digit and in words in their books.

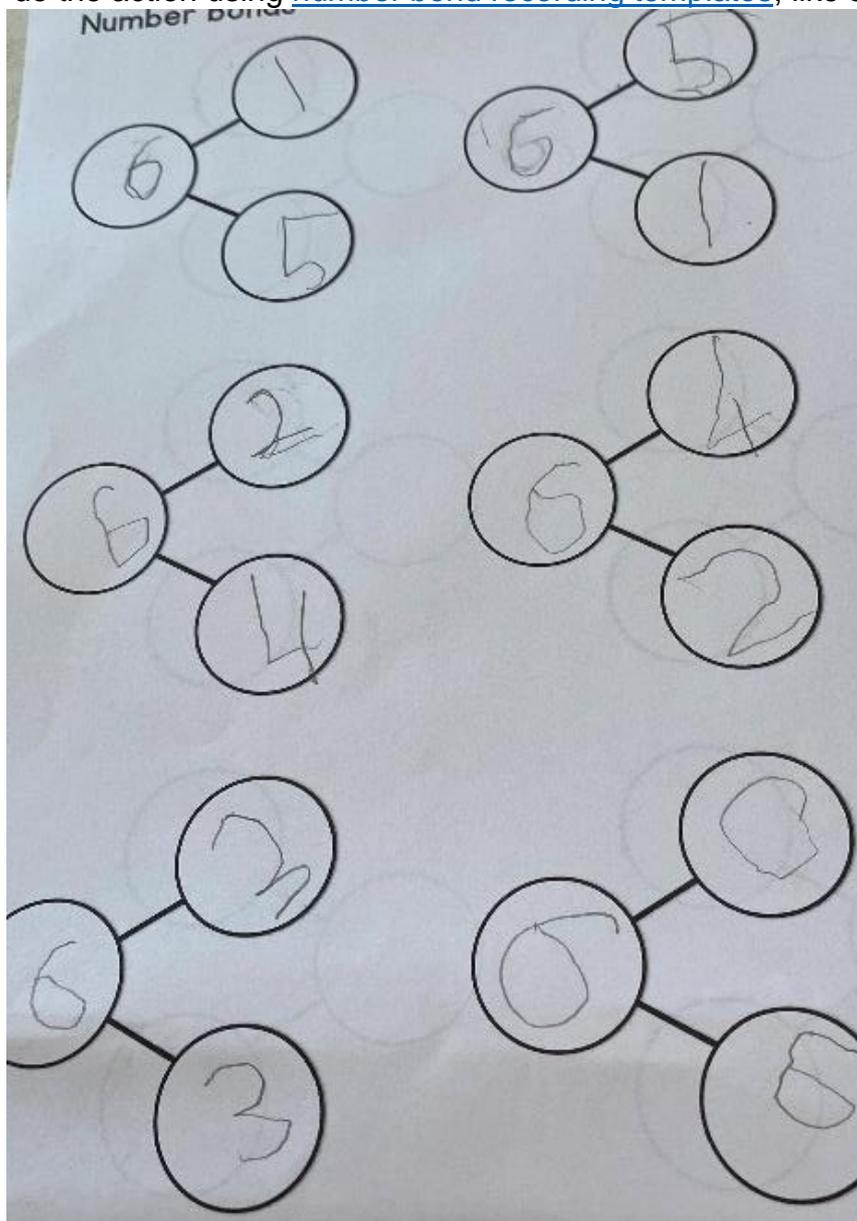
Students can then break into pairs and try each rotation for a set time:

- Aiming to beat their personal best skipping record without stopping (and recording each attempt, e.g. 5, 4, 7 as digits and words in their books).
- Counting laps as they run between the two cones (aiming for 10 laps or more), before the sand timer runs out.
- Doing hopscotch, saying numbers sequentially out loud as they hop on one foot.
- Throwing bean bags at targets drawn in chalk, saying each number on which the bean bag lands out loud as a word.
- Timing each other walking across balance beams, or any post that could be used as a makeshift beam, then recording their time in seconds in their books. If timers are in short supply, one partner can simply count, "1 cat and dog, 2 cat and dog, 3 cat and dog..."

*Many of these activities can be integrated into first-year-of-school PMP programs, with a deliberate focus on early number development linked to these kinaesthetic activities.*

**Support:** Count out loud directly next to a more capable partner, who knows a higher sequence than them, so that they can start to learn the next numbers and consolidate the sequence they do know. This more capable partner can also do the extension without them.

**Extension 1:** How could you do 5 star jumps? For example, you could do 4 and 1, 3 and 2, 2 and 3, 1 and 4, or 2 and 2 and 1. Record each way they chose to do the action using [number bond recording templates](#), like so:

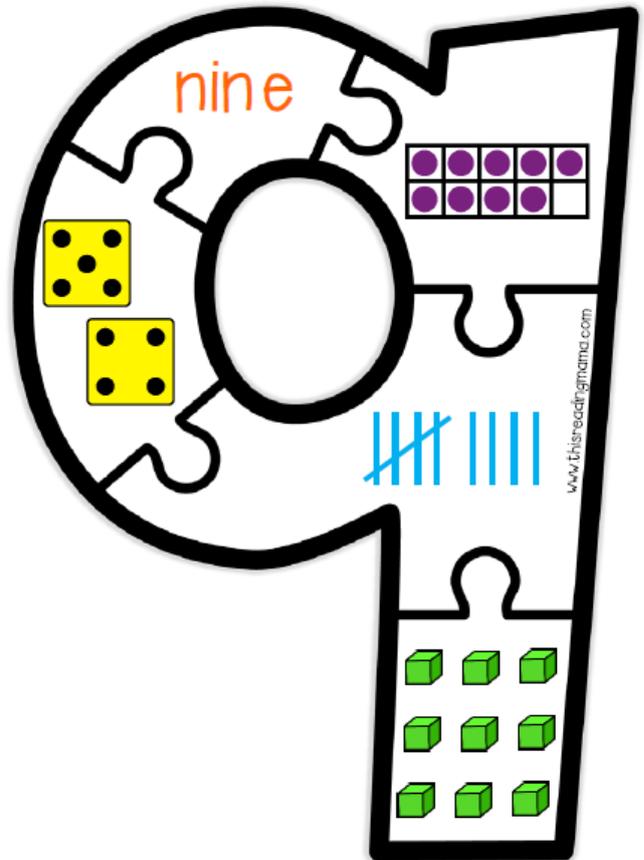
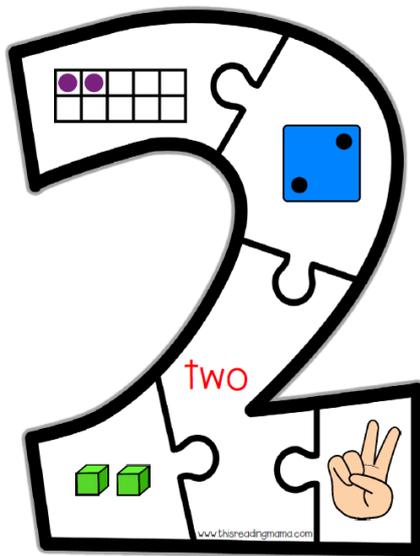


**Student work sample:** All the ways to do 6 jumps, recorded in [number bonds](#)

**Extension 2:** How long is a minute? How many of each action can you do in a single minute (for example, how many hops, jumps, claps, clicks)? Set up a 60-second timer that dings when it goes off, so students can record that number in digits and words, then try another movement. For actions like claps, this may allow students to perform and, therefore, count to a very high number. Provide extension students with the [number spelling assistance chart](#) from this unit's folder and a [120 chart](#), if needed for support with the recording aspect of this challenge.

**Exit ticket:** Number puzzles – a free download from this author <https://thisreadingmama.com/printable-number-puzzles-1-10/>. Scroll to halfway down this website page and click this button to download the free templates:

Click [HERE](#) to get your **Free Printable**



## Counting Lesson 21

**Real-life link to excite the students:** The postie came this morning! He left all these letters for you! Create a class post-office box by covering any regular cardboard box with red paper. Distribute the number envelopes to students from this box and, when they finish each set, have them mail them back into the box and collect a new envelope from the back of it.

**Pretend story:** When you collected your mail this morning, you bumped into your neighbour, dropping your letters everywhere! Now, you need to sort out your mail!

## Number Envelopes

**Learning intention:** Match quantities (numbers of things) to digits and words  
**Maths vocabulary:** quantity (number of things), digit, word

**Lesson summary:** Students collect a number envelope, mix it with their partner's mail, then try to sort the mail by matching each quantity to its digit and worded form.

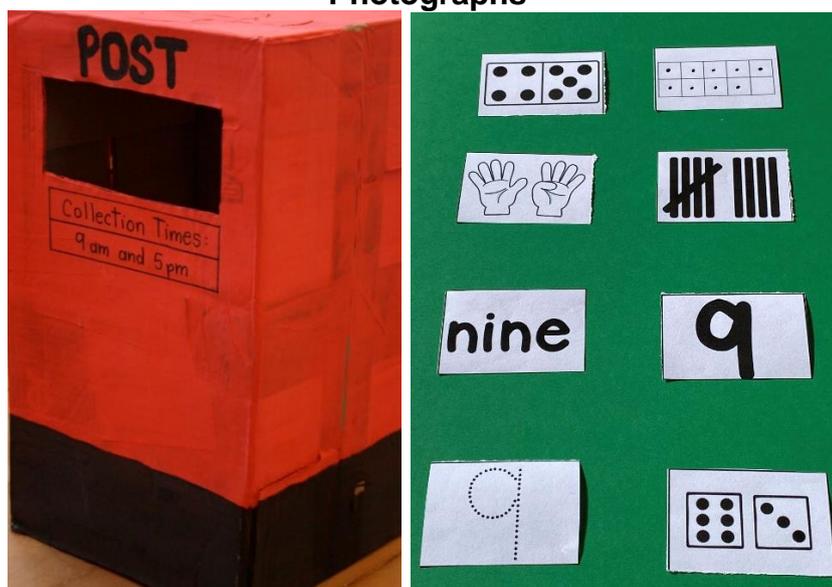
**Materials:** [Number envelope](#) templates from this unit's folder. Pre-slice and distribute into envelopes with worded labels – 'one,' 'two,' and so on up to 'ten.' Make 30 envelopes in total. Students will also need small counters (or mini erasers) to create their matching quantity in the blank ten frame cards.

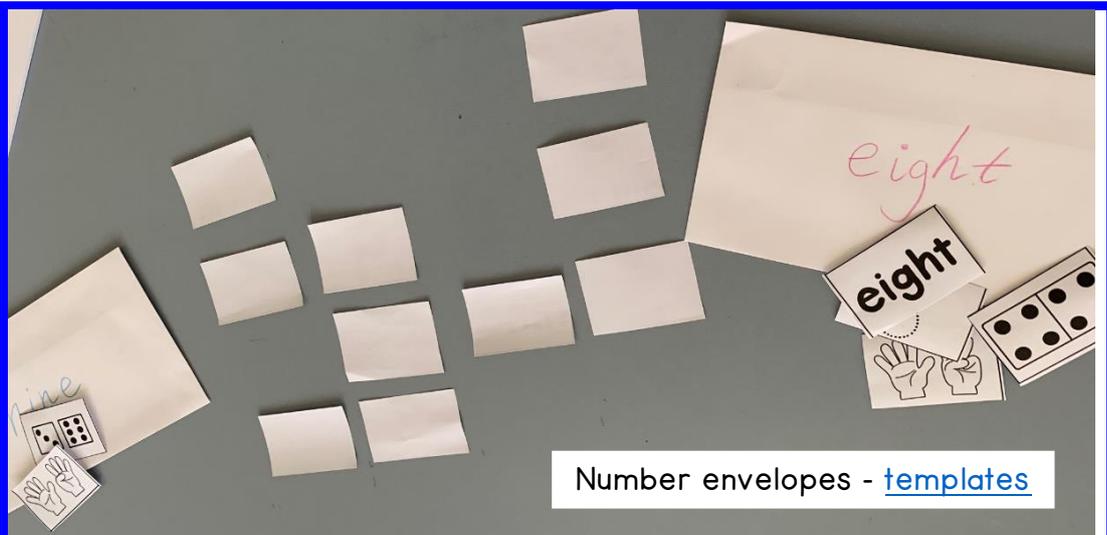
**Best set-up:** Fishbowl model, then bump into someone to mix up your mail, and try to sort it again.

**Modelling:** Explain the word 'quantity' as the number of things. Quantities can look different, depending on what type of object you use (your fingers, tally marks, counters) but they all still make the same number and are shown by the same digit and word. Just like letters show sounds, digits show quantities. Maths is great, because a digit always means the same number of things, unlike letters that can make different sounds!

**Instructions:** Put your envelope in front of you (which has the number written on it in words). Now mix up all of your mail inside the envelope with one other partner's mail, pretending your letters spilt out. Put all this mail face-down on a grip mat. Now try to pick up your own mail, choosing one piece to turn face-up. If that quantity belongs to your digit, collect it and put it back in your envelope. If the quantity does not belong to you, put it back on the table, face-down. Take turns to try to find your own matching quantity-digit-word mail. After all cards are collected, lay out your mail face-up, as shown in the photo, and check all the quantities match your digit and word. Re-post your mail into the class mailbox and collect a new envelope.

### Photographs

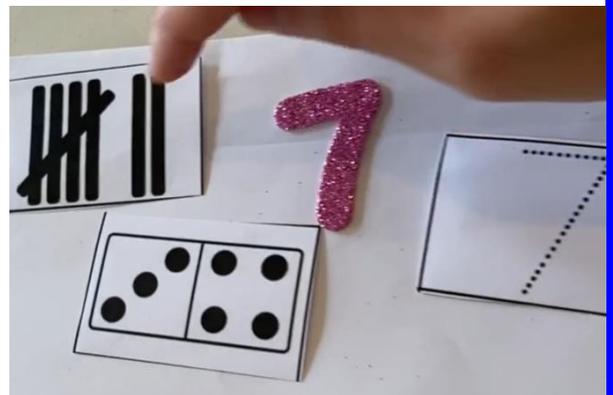




Number envelopes - [templates](#)

**Questioning:**

- How do you know that mail belongs to you, not your partner?
- How would you show that quantity as a digit? As a word?
- What are some other ways to make 7?



**Support:** Start with the number envelopes for 1, 2 and 3.

**Extension:** After a few turns at the regular mail, create their own letters for the teen numbers, drawing multiple representations for each number, such as tally marks, dominoes, dice, playing cards, ten frames and real-life objects. Slice up their mail and mix it with a like-ability extension student.

**Exit ticket:** Fun option for a quick exit ticket for the final 5 minutes of the session – dot-to-dot counting sheets available for free download here <http://www.worksheetfun.com/?s=dot+to+dot&submit.x=0&submit.y=0>

## Counting Lesson 22

## Count to the Beat...pushing each students' counting limit

Learning intention: Count to 10 and beyond

Maths vocabulary: count (tap and say)

### Link to students' interests:

Who likes music? Play a few of students' favourite songs by request, using your smartphone to quickly stream them and play 30 seconds at a time. (Ensure the songs are appropriate for the classroom, perhaps by making a quick request list with students the day prior). Today, we are doing music maths!

**Lesson summary:** Students work in like-ability pairs using instruments including makeshift drums, home-made guitars and xylophones, to count the beats their partner makes. Partners can also act as the conductor, instructing their one-person band to make a certain number of beats using words or digits written on a mini whiteboard.

### Materials:

- [Beat dot templates](#) from this unit's folder for support.
- Makeshift drums – upside-down containers and sticks/twigs
- Home-made guitars students could create as a home project the weekend prior, as shown in the photograph below.
- Xylophones if available from the music room. If not, then students can just use sticks, clapping these together, or a few different sized containers upside-down to form a makeshift xylophone.

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

**Modelling:** Model examples with a student proposing a number to you (in words or digits) on a mini whiteboard. You then use the [beat templates](#) to first practise counting that number, then perform it on the instrument of your choice. Switch roles and repeat.

### Questioning:

- Did I hit the same number of times with both hands, or did one hand get an extra beat? That shows whether the number is even or odd.

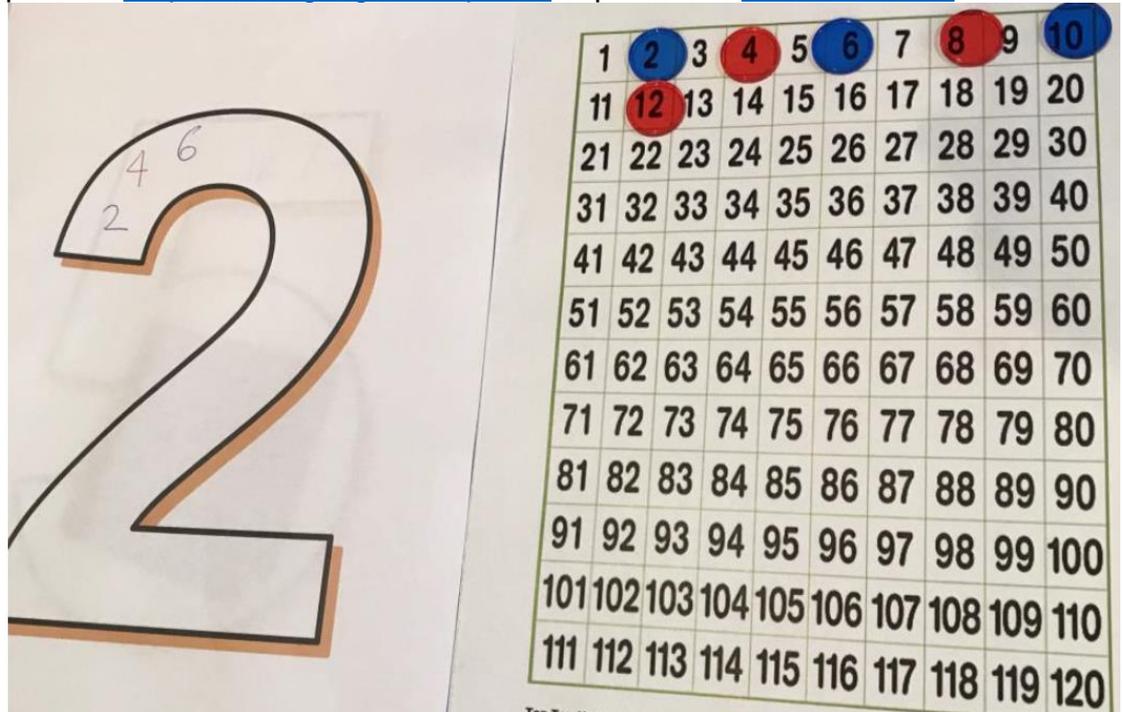
**Class management tip:** For noise control, encourage quiet beats as opposed to 'bashing' their drums. Musicians respect their instruments and do not want to ruin their own ears! Also consider running this session outside, so students can spread out more in their pairs.

Home-made guitar for the number beats lesson



**Support:** Set a maximum number of 5 beats. Use the [beat dot templates](#) to make the number written by their partner.

**Extension:** Use skip-counting by 2s (tapping two sticks at once), or even hold 2 sticks in each hand to count by beats of 4, to make large numbers. Use a [120 chart](#) and counters to help them develop the counting by twos or by fours pattern: [Skip-counting digits templates](#) explained in [Patterns Unit 2](#)



[Pre-highlighted 120 charts](#) with patterns suitable for extension students are also available in the [Patterns Unit 2 Templates](#) folder:

Skip-count by 2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Skip-count by 5

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Record the skip-counting patterns they said, after they have made them with their makeshift instruments. For example:

2, 4, 6, 8, 10, 12      6 hits of 2 sticks made 12       $6 \times 2 = 12$

**Variation:** Students work in pairs, aiming to score points as a team. Partners sit down. Partner B has their back to partner A. Partner A is facing partner B's back.

Partner A pulls a playing card and gently taps their hand on partner B's back that number of times, or makes that number of beats without partner B being able to see (only using their ears). Partner A writes the number they think they heard as a digit and word on a mini whiteboard.

Partner A turns around to see partner B's card. If the playing card matches what partner A wrote on the mini whiteboard, the team scores a point. Roles reverse and the game repeats.

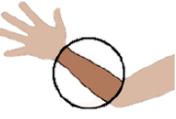
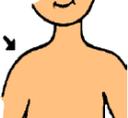
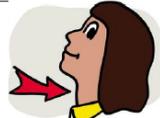
This game can also be done with digit tracing, with partner A tracing a digit onto partner B's back.

**Variation – link to the Indigenous number systems:** Learn about Indigenous number systems using these clips: <https://libguides.msben.nsw.edu.au/indigenoustralianmath>

Students can then focus on the **Wotjoballum number system**, which was an Indigenous numerical system involving pointing to body parts to signify a quantity.

**Game:** Student A points to a body part, student B then uses the chart to work out the number. Student B replicates that quantity as beats on their makeshift instrument (taps of the drum, clap sticks or hits of a xylophone).

Whole-class model until students remember the actions to at least 7 (since 1-5 are points to the fingers, starting from the little finger and working up to the thumb as 5). There is also an entirely [visual chart](#), created by Top Ten, which students can refer to in the [Templates](#) folder of this unit.

1		2	
3		4	
5		6	
7		8	
9		10	
11		12	

**Overview of the Wotjoballum number system for teachers to explain and summarise for students:**

Number	Body part (point to this)	Aboriginal word	Translation
1	little finger	<i>Giti mŭnya</i>	little hand
2	the ring finger	<i>nya</i>	from <i>gaiŭp</i> = one, <i>mŭnya</i> = hand
3	the middle finger	<i>Marŭng mŭnya</i>	from <i>marung</i> = the desert pine. (the middle finger being longer than the others, as the desert pine is taller than other trees in Wotjo country)
4	index finger	<i>Yolop-yolop mŭnya</i>	from <i>yolop</i> = to point or aim
5	the thumb	<i>Bap mŭnya</i>	from <i>Bap</i> = mother
6	the inside of the elbow joint	<i>Dart gŭr</i>	from <i>dart</i> = a hollow, and <i>gur</i> = the forearm
7	the forearm	<i>Boibŭn</i>	a small swelling (i.e. swelling of the forearm muscles)
8	inside of elbow	<i>Bun-darti</i>	a hollow
9	the biceps	<i>Gengen dartchŭk</i>	from <i>gengen</i> = to tie, and <i>dartchuk</i> = the upper arm.
10	the point of the shoulder	<i>Borporŭng</i>	
11	throat	<i>Jarak-gourn</i>	from <i>jarak</i> = reed, and <i>gourn</i> = neck, (i.e. where the reed necklace is worn)
12	earlobe	<i>Nerŭp wrembŭl</i>	from <i>nerŭp</i> = base and <i>wrembŭl</i> = ear

**Extension:** Student A signifies a number by pointing to a body part. Student B makes another. Then the students write down both numbers and solve the total together. Students can use their understanding of combinations/ways to make a number, or counting on from the larger number to solve it. Draw the equation using the actions of the Wotjoballum number system:



**Formative Assessment – counting mat for 1 to 10:**

<https://drive.google.com/file/d/146NzGvTKNVLseNoWVm0e1jjKXHmeDAIw/vi>  
ew

# Counting Unit Celebration

Build-a-Bear Mix and Match Parts for the numbers 1 to 10

