

**Math: Grade 2, Lesson 3, Represent a two-digit number in more than one way**

**Lesson Objective:** Students will use manipulatives and place value mats to represent two-digit numbers in more than one way, focusing on decomposing in the tens place.

**Practice Focus:** Represent a two-digit number as groups of tens and ones in more than one way. Focus on decomposing in the tens place.

**TN Standard:** 2.NBT.A.1

**Teacher Materials:**

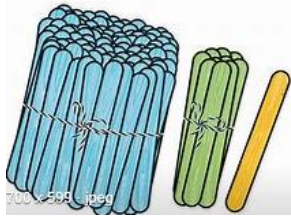
- Craft sticks and pre-bundled groups of ten craft sticks (at least 8 bundles of ten)
- Place value mat featuring ones and tens
- White board or piece of paper to draw models and record quantities

**Student Materials:**

- Paper, pencil, and a surface to write on
- The student packet for Math, Grade 2, Lesson 3 which can be found at [www.tn.gov/education](http://www.tn.gov/education)

Teacher Do	Student Do
<p><b>Opening</b> (3 minutes)</p> <p>Hello! Welcome to Tennessee's At Home Learning Series for math! Today's lesson is for all our 2<sup>nd</sup> graders out there, though all children are welcome to tune in. This lesson is the third in our series.</p> <p>My name is ____ and I'm a ____ grade teacher in Tennessee schools! I'm so excited to be your teacher for this lesson! Welcome to my virtual classroom!</p> <p>Today we will be learning about how to represent a two-digit number as groups of tens and ones in more than one way. Before we get started, to participate fully in our lesson today, you will need:</p> <ul style="list-style-type: none"><li>• Paper and a pencil, and a surface to write on</li><li>• The student packet for Math, Grade 2, Lesson 3 which can be found at <a href="http://www.tn.gov/education">www.tn.gov/education</a></li></ul> <p>If you didn't see our previous lesson, you can find it at <a href="http://www.tn.gov/education">www.tn.gov/education</a>. You can still tune in to today's lesson if you haven't see any of our others. But, it might be more fun if you first go back and watch our other lessons since we'll be talking about things we learned previously.</p> <p>Ok, let's begin!</p>	
<p><b>Intro:</b> (5 minutes)</p>	

Yesterday, we made models using craft sticks and drawings. We built numbers two different ways: using only ones and then using ones and ten bundles. The models that you draw do not need to be perfect. [Draw a place value mat with ones, tens, and hundreds.] **This is what my place value mat looks like. Can you draw one?** [Pause.] **Now let's add models of our ones, tens, and hundreds.** [Draw a model of a one, a ten, and a hundred on the place value mat.] **This is what mine look like. Can you draw yours?** [Pause.] **Remember that our models do not have to be perfect.**



For our first task, let's draw a place value chart and then model 12 using as many bundles of ten as you can. [Use craft sticks to build 1 ten and 2 ones.] **I have one ten and two ones to make 12. Now, I am going to draw this on my place value chart.** [Draw the place value chart, and then draw the representation of 12.] **Does your drawing look like mine?** [Pause.]

Let's count them together. First we will count by 10s and then add on 2 ones. Ready? [Pause.] **10, 11, 12.** Now, let's count by 10s, and then by 2s. [Pause.] **10, 12. Very good!**

Let's model 12 a different way. How else you could build 12? [Pause.] [Unbundle your ten and place the craft sticks in the ones column.] **We could also build 12 with 12 ones. Go back to the original model. Circle the ten bundle and draw an arrow back to the ones place.** [On your place value mat, circle the ten bundle and draw an arrow back to the ones place.] [Pause.] **Add ten ones to the ones place.** [On your place value mat, add ten ones to the ones place.] [Pause.]

Please write the number in a way that matches our models. [Pause.] **We modeled the number 12 two ways. First, we used a ten and 2 ones. Then we unbundled the ten and moved the ones to the ones place. Both models show the number 12.** [Pause.]

I wonder if there are *more than* two ways to build a number. [Pause.] **Touch your toes 12 times!**

Student draws place value mat.

Student draws a model of ones, tens, and hundreds.

Student draws place value chart.

Student draws 12.

Student answers.

Student counts with teacher.

Student counts with teacher.

Student answers with 12 ones.

Students complete the work.

Students complete the work.

Student writes 12 in different ways.

Student touches toes.



**Teacher Model** (10 minutes)

*Teacher Note: We are going to use this idea of unbundling to build a numbers by decomposing tens and moving the quantity to the ones place. The next lesson in the arc focuses on composing numbers by making groups of tens and moving numbers out of the ones place.*

**I am going to build 33 with the most tens possible.** [Draw a place value mat and build 33 with 3 bundles of craft sticks and 3 ones.] **Let's count together as efficiently as possible. Let's count by tens. 10, 20, 30, 31, 32, 33.**





**I'm going to model 33 on a place value mat and record all of the different ways that we can write 33 from this model.**

[Draw the place value mat on a whiteboard or other space where you can add to it.]

Tens	Ones	
		3 tens + 3 ones 30 + 3 33

**I remember from our first problem together that I can unbundle a ten and still have the same value!** [Unbundle one of the tens and move the craft sticks to the ones column.]

**Let's capture the unbundling on our place value mat. First, I am going to circle a bundle of ten and draw an arrow from that bundle to the ones place.** [Draw this on the place value mat as you talk.] **Now I am going to draw ten ones in the ones place to represent the unbundling of ten.** [Draw this on the place value mat as you talk.] **Now we have two tens and 13 ones.**

Tens	Ones	
		3 tens + 3 ones 30 + 3 33
		2 tens + 13 ones 20 + 13 33

**Notice we still have the number 33. We haven't added to or taken away from the number.** [Pause.]

**Hmm... could we unbundle another ten without changing the value of the 33? Please jump up and down twice if you think we could unbundle another ten!** [Pause.]

Student counts with teacher.

Student jumps up and down.

[Unbundle another ten and move the ones to the ones column.] **Let's count together! 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33.**

**Let's add the unbundling to our place value chart. Describe what the chart will look like.** [Pause.]

**You may have said, I think the place value chart will have one less ten and ten more ones. It is going to be harder to count the ones because there will be more.**

[Draw the place value chart. Explain as you draw.] **I am going to circle a bundle of tens, and then draw an arrow from that bundle to the ones column. Now, I am going to draw ten ones in the ones place. We haven't added or taken anything away from 33. The value is still the same, it is just in a different form. As we are decreasing the tens, we are increasing the ones by ten each time.**

Tens	Ones	
		3 tens + 3 ones 30 + 3 33
		2 tens + 13 ones 20 + 13 33
		1 ten + 23 ones 10 + 23 33

**Does the mat look like you thought it would?** [Pause.]

**I notice that there is one more ten. Do you think we could unbundle the last ten? [Pause.] [Unbundle the last ten and slide the ones to the ones place.] Let's record this on our place value mat. [Pause.] [Draw and explain.] I am going to circle the final bundle of ten and draw an arrow to the ones place. Now I am going to draw ten ones in the ones place.**

Tens	Ones	
		3 tens + 3 ones 30 + 3 33
		2 tens + 13 ones 20 + 13 33
		1 ten + 23 ones 10 + 23 33
		0 tens + 33 ones 0 + 33 33

Student counts with teacher.

Student describes.

Student answers.

Student answers.



**We can write 33 lots of different ways! How many ways do you see?** [Pause.]

**Did you count ten ways to write 33?** [Pause.] [Add “thirty-three” to the running list on the right of the place value mat.]

**Guided Practice** (10 minutes)

**We just thought about all of the ways that we could build the number 33. Now we are going to work with the number 52. On your own piece of paper, would you please draw a place value chart like mine?** [Pause.] [Show students your place value chart that is large enough to decompose 52.] **Write the expressions underneath the chart if you wish.**

**Please build the number 52 with me. I am going to use our craft sticks and a drawing. You will be drawing on your place value mat. Compose 52 with the manipulatives and record the ones and tens on the place value mat.** [Pause.]

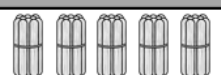



Tens	Ones
	

**How many ways could write this number?** [Pause.] **We could write is in these ways. 52, 5 tens + 2 ones, and 50+2.** [Write as you talk.]

**We know that we can unbundle a ten and still have the same amount. While I am breaking a ten apart, I want you to draw what that would look like in your place value mat.**

**Decompose a ten and move the pieces to the ones place.** [Pause.]

**Let's compare our place value mats.** [Share your drawing.]

Tens	Ones
	
	

**Write down all of the different forms of this number.**

[Pause.] **We could write 52, 5 tens + 2 ones, 50+2, fifty-two, 4 tens + 12 ones, and 40 + 12. Remember that the group of ten that we unbundled is no longer a ten. It has been broken into ones and moved to the ones place.**

**We can continue to unbundle a ten and still have the same amount. While I am breaking another ten apart, I want you**

Student answers.

Student draws a place value chart.

Students build 52 with 5 tens and 2 ones.

Student answers.

Student draws on their place value chart.

Student writes 52 in different ways.

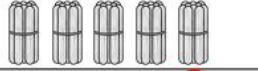

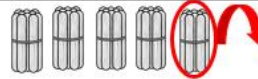


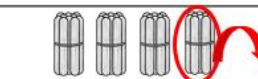










to draw what that would look like in your place value mat. **Decompose another ten and move the pieces to the ones place.** [Pause.] [Complete the work on your place value chart.]

**In what new ways can we write 52?** [Pause.] **Show me on your paper.** [Pause.] **You could now add 3 tens + 22 ones and 30 + 22.**

**Let's do this again. Unbundle another ten on your place value mat, and then write the new ways to show 52.** [Pause.] [Complete the work on your place value chart.] **Based on this model, we could write 52 with 2 tens + 32 ones, and 20 + 32.**

**Let's do this again. Unbundle another ten on your place value mat, and then write the new ways to show 52.** [Pause.] [Complete the work on your place value chart.] **Based on this model, we could write 52 with 1 ten + 42 ones, and 10 + 42.**

**Let's do this one more time. Unbundle another ten on your place value mat, and then write the new ways to show 52.** [Pause.] [Complete the work on your place value chart.] **Based on this model, we could write 52 with 52 ones.**

Tens	Ones
	
	 
	 
	 
	 
	

**Independent Practice** (1 minute)

Student completes their place value chart.

Student writes new ways for 52.

Student completes their place value chart.

Student writes new ways for 52.

Student completes their place value chart.

Student writes new ways for 52.

Student completes their place value chart.

Student writes new ways for 52.

Student completes work independently.

**PBS Learning Series**

<b>Today we have practiced representing two-digit numbers in more than 1 way. You sure did a great job! After the video, you will have some problems to practice on your own. Good luck and do your best!</b>	
<b><u>Closing</u> (1 min)</b> <b>I enjoyed doing some mathematics with you today! Thank you for inviting me into your home. I look forward to seeing you in our next lesson in Tennessee's At Home Learning Series! Bye!</b>	

*This work is based on an original work of EngageNY/Eureka made available through licensing under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. This does not in any way imply that EngageNY/Eureka endorses this work. Licensing terms: <http://creativecommons.org/licenses/by-nc-sa/3.0/>*