4th Grade - Week 2
4.NBT.1 & 4.NBT.2

OVERVIEW

The focus this week is understanding of place value and the knowledge that there are many ways to represent a number - through digital modeling (base ten blocks and discs), word form, and standard form. Students will also learn how the value of digits increase by a magnitude of ten as they go to the left on the place value chart.

Target Standard 4.NBT.2	**4.NBT.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
Skills	❏ Read and model multi-digit numbers.
Learning Intention	**Today I am learning to...** ❏ read and model large numbers.
Success Criteria	**I know I am successful when I can...** ❏ read and model multi-digit numbers using base ten blocks.
Item Specification	❏ Item Spec - DOK 1 ❏ Item Spec - DOK 2
Vocabulary	place value, value, digit, ones, tens, hundreds, thousands, unit, rod, flat, cube, comma, models
Sentence Frames	I think _____ because _____. This reminds me of ____ because _____. There are ____(quantity) ____ (base ten blocks). I modeled the problem by _____. I agree with _____ because _____. I respectfully disagree with ____ because _____.
Intro (approximately 10 minutes)	**Opening** • Display visual of number line, bicyclist, car, and airplane. • Ask students what they notice? Allow think time. • Ask students what they wonder? Allow think time. • Read the word problem aloud. • Evaluate each transportation method as it relates ted to the word problem. • With student justification, place each transportation method where students believe it should belong on the number line. • Encourage students to use agree/disagree hand signals. • Encourage academic collaborative conversation once items are placed. • Encourage class discussion, to determine if items are placed appropriately.
Lesson	**Model/Think-Aloud**

(approximately 30 minutes)	• Review place value as students likely recall from third grade (through the thousands place). • Introduce academic vocabulary (place value, value, digit, ones, tens, hundreds, thousands, unit, rod, flat, cube, comma). • Review base ten block names and values, carefully pointing them out as to how they will look virtually. • Inform students that we will be modeling with base ten blocks today. • Remind students that even though they are digital base ten blocks, we still want to use them as learning tools and not toys. • Explain the idea of tools vs toys. • I do: Model the process of finding the number represented by base ten blocks by thinking aloud. (Emphasize how to manipulate the digital base ten blocks.) • We do: Guide the students through the process of evaluating the number of base ten blocks in each place value, the value of those blocks, and the multi-digit number represented. (Continue emphasizing how to manipulate the digital tools.)
Closing (approximately 10 minutes)	**Check for Understanding:** **Independent assignment is located in the Google Slides presentation. It may be assigned through Google Classroom. • Students will determine and write the number 3,668 modeled by digital base ten blocks in a place value chart. • Students will model the number 4,799 using digital base ten blocks. • Students will model and write a number of their choice using base ten blocks. • Students will share their modeled, multi-digit number with a partner. **Reflection:** How did you behave like a mathematician today?
Resources	Week 2 Math Slides - 4.NBT.1 & 4.NBT.2
Credits	None

Target Standard 4.NBT.2	**4.NBT.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
Skills	❏ Read multi-digit numbers. ❏ Write multi-digit numbers in word form. ❏ Identify place value.
Learning Intention	**Today I am learning to...** ❏ read large numbers aloud and write them in word form.
Success Criteria	**I know I'm successful when I can...** ❏ read and write large numbers accurately.
Vocabulary	comma, standard form, word form, period, place value, value, digit
Item Specs	Item Spec - DOK 1

	Item Spec - DOK 2
Sentence Frames	• I believe _____ because _____. • The digit ____ is in the _____ place. • The digit in the _____ place is _____. • The value of the digit ___ is _____. • I agree with ____'s idea because _____. • I respectfully disagree with ____'s idea because _____.
Intro	**Opening** • Introduce the place value chart up to the millions period to students. • Explain that in third grade students studies place value up to the thousands place usually. In fourth grade, however, we learn about numbers all the way to the hundred millions place. • Tell students that each group of three numbers is called a period. The periods are the ones period (ones, tens, hundreds), thousands period (thousands, ten thousands, hundred thousands), and the millions period (millions, ten millions, hundred millions). • Emphasize that it is the same as the place value they learned about in third grade, just extended. • Inform students that we will be reading multi-digit numbers aloud and also writing them in word form.
Lesson	**Model/Think-Aloud** • Display the number 948. Explain that since this number only has three digits, all three digits will be in the ones period while referring to the place value chart. (Model thinking.) Remind students that the way we read a number aloud is the same way we would write (in this case type) a number. (Model thinking) Emphasize that the place value chart is a great resource for spelling place value words correctly (in this case hundred). • Display the number 8,771. Ask students what they notice about the number. Target responses: There are four digits. There is a comma.Model think aloud for understanding how to read this four digit number aloud. Remind students that the place value word (in this case thousand) will not always be there but it is presented as a guide while initially reading larger multi-digit numbers. • Display the number 218,008. Ask students to share how this number differs from the previous number. Target response: There are six digits. Practice reading 218,008 aloud and then typing it in word form together with students. • Continue to guide students through reading of multi-digit numbers with values in the millions place. Emphasize the relationship between each digit and its place value. • Display the identifying place value slide. Model how to identify the place value for the digit 9 in the first number. Emphasize academic vocabulary (digit, place value, value) during your think aloud. • Model how to identify place value during a number below a place value chart. • Together, read and identify the place value of the first 8 in 82,801,331.
	Check for Understanding: **Independent assignment is located in the Google Slides presentation. It may be assigned through Google Classroom.

	• Students will practice reading multi-digit numbers aloud, writing them in word form, and identifying the place value of various digits. **Reflection**: Why is it important to know about place value?
Resources	Week 2 Math Slides - 4.NBT.1 & 4.NBT.2
Credits	

Target Standard 4.NBT.1	**4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
Skills	• Use visuals to see how digits change in value as they move from left to right.
Learning Intention	**Today I am learning to...** ❏ recognize how digit values increase from left to right on a place value chart.
Success Criteria	**I know I'm successful when I can...** ❏ explain how values of digits change as they move from left to right on a place value chart.
Vocabulary	times larger, digit, place value, value, increase
Item Specs	Item Spec - DOK 1 Multiple Choice Item Spec - DOK 2 Numeric Entry
Sentence Frames	The value of a digit increases by ____ times as it moves from left to right on the place value chart. I know my answer is correct because _____. I agree with _____ because _____. I respectfully disagree with _____ because _____.
Intro	**Opening** Ask students what they notice about how base ten blocks are related. Encourage student discussion. Point out how base ten blocks are increasing by ten when they move from left to right.
Lesson	**Model/Think-Aloud** • Display two ones units. Tell students these units represent the digit 2, and the value is 2. • Then display two tens rods. Tell students these rods still represent the digit 2, however, the value is now 20. • Continue this pattern through the thousands place. (Emphasize same digit, different place value, different value) • Explain that each time a digit moves to the left, it increases in value by ten times that as it was before. • Repeat the same process as before, however, this time with the digit 5 on the place value chart. • Ask students what they notice was the same and different between when there were base ten blocks and this time when we are viewing a digit. • Display the number 3,333 on the place value chart. Read problem aloud and

	model thinking. • Partner Work - Have students work with a partner (or group) to complete the pattern and explain their reasoning.
Closing	**Check for Understanding:** **Independent assignment is located in the Google Slides presentation. It may be assigned through Google Classroom. • Students will practice place value and explain the difference between the same digit in two different place values. **Reflection:** What is the pattern you noticed as digits move from left to right on a place value chart?
Resources	Week 2 Math Slides - 4.NBT.1 & 4.NBT.2
Credits	Curriculum Associates, LLC

Target Standard 4.NBT.1	**4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
Skills	• Model to show how values of digits change.
Learning Intention	**Today I am learning to...** ❏ use models to show how digit values change when multiplied by ten.
Success Criteria	**I know I am successful when I can...** ❏ use models to show how digits increase by ten.
Vocabulary	times larger, value, discs, equation, magnitude, increase
Item Specs	Item Spec - DOK 1 Multiple Choice Item Spec - DOK 2 Numeric Entry
Sentence Frames	A larger unit we can make with ___ is _____. We have ___ discs. (quantity) We have _____ _____ discs. (quantity and place value) One ten is ____ times greater than 1 one. One hundred is ___ times greater than one ten. One thousand is ___ times greater than one thousand. One ten-thousand is ___ times greater than one thousand.
Intro	**Opening** • Estimation 180 Lesson - How many sheets of paper are in a ream? • Introduce the discs strategy. Inform students discs are more efficient to draw than base ten blocks. Explain to students that the four discs in the ones place represent 4. • Display model of 4 tens discs and 4 ones discs. Emphasize that though the digit is the same in both place values, the digit 4 increased by ten times from that in the ones place.

Lesson	**Model/Think-Aloud** • Display model of 1 disc. Ask students how many units we have now. (1) • Present next slide and ask students to count the discs (10). Then present the question "what larger unit can we make with ten ones?" (Target response: 1 ten) Remind students that we can't have a digit of larger than a 9 in each place value. • Display the next slide. Have students count to ten ones discs. Then present the question "what larger unit can we make with ten ones?" (Target response: 1 ten) Emphasize that we fill in the digits in the place value chart. Since we have 1 ten, we would write a "1" in the tens place and since we now have zero ones discs we would write a "0" in the ones place. • Display slide 76. Emphasize that one hundred is ten times as much as one ten. Ask students if they are noticing any patterns? • Ask students to look for and discuss any patterns they notice. (Target responses: 10 ones make 1 ten. 10 tens make 1 hundred. 10 hundreds make 1 thousand. Every time we get 10, we bundle and make a bigger unit. We copy a unit 10 times to make the next larger unit. If we take any of the place value units, the next unit on the left is ten times as many.) • Read key equations aloud to clarify (slide 78). • Model the equation 10 x 2 ones. Ask students what 10 times as many as 2 ones is…? (Target response: 20 ones = 2 tens) Guide students through the process of using tools (circle shape tool to group groups of ten, etc.) and how to copy the discs using ctrl+c and ctrl+v. • Model the equation 10 x 9 hundreds. Model how to solve for 10 times as many as 9 hundreds using discs, using the think aloud strategy.Remind students how to create more discs on the chromebook (ctrl+c, then ctrl+v) in order to place the discs on the place value chart. Model how to write an equation to find the value of 10 times as many as 9 hundreds. (Target response: 10 × 9 hundreds = 90 hundreds = 9 thousands) • Guide students through solving for 10 times as many as 7 tens using discs. Remind students how to create more discs on the chromebook (ctrl+c, then ctrl+v) in order to place the discs on the place value chart. Model how to write an equation to find the value of 10 times as many as 7 tens. (Target response: 10 × 7 tens = 70 tens = 7 hundreds)
Closing	**Check for Understanding:** • Independently, students will solve for 10 times as many as 7 tens using discs. Remind students how to create more discs on the chromebook (ctrl+c, then ctrl+v) in order to place the discs on the place value chart. Encourage them to write an equation to find the value of 10 times as many as 6 hundreds. (Target response: 10 × 6 hundreds = 60 hundreds = 6 thousands) • Assign students the Interpret a Multiplication Equation as a Comparison (Student Page) to work on skills learned in today's lesson. **Reflection:** What happens to the value of the digit in the ones place when a number is multiplied by 10?
Resources	Week 2 Math Slides - 4.NBT.1 & 4.NBT.2 Interpret a Multiplication Equation as a Comparison (Student Page)
Credits	

Target Standard 4.NBT.1	**4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
Skills	❏ Recognize a digit represents 10 times the value of what it represents in the place to its right
Learning Intention	**Today I am learning to...** ❏ use a place value chart to help me determine the value of groups. .
Success Criteria	**I know I am successful when I can...** ❏ use strategies to help me find the number of groups given.
Vocabulary	place value, value, digit, expanded form, base ten blocks, magnitude
Item Specs	Item Spec - DOK 1 Multiple Choice Item Spec - DOK 2 Numeric Entry
Sentence Frames	The value of the __ (digit) in the ___ place is _____. There are ____ times as many ___ as _____. The strategy I used to solve is _____. I can check my answer by _____. I know the number 21_____. I agree with _____ because _____. I respectfully disagree with _____ because _____.
Intro	**Opening** • Students will work on the task of evaluating digits in 54,382 independently, with a partner, or group. Have students provide justification for their answer. • Explain that we have previously used models (base ten blocks and discs) to help us understand how values change based on their place value. We can also use a place value chart. Today we will be using place value charts and standard numbers.
Lesson	**Model/Think-Aloud** • Display the number 21 in a place value chart. Ask students what they notice about this number? Have students turn and talk with partner using the sentence frame I know the number 21_____. • Display slide 94 and describe that when we multiply by 10, we move the digit one place to the left. In this example, we started with 2 groups of 10 (20), and when we multiplied by 10, we now have 2 groups of one hundred because 10 x 10 = 100. • Model by way of think aloud how to use place value to determine how many marbles are in the buckets. Refer back to example place value charts on slides 91 and 92. • Before guiding students through solving the next problem, ask students what the difference is between the boxes in this problem and the groups in the

	previous problem (10 bags of 547 marbles). Remind them that it is important to pay close attention to how many groups there are. Instead of 10 groups like our previous problems, there are now 100 groups (or boxes in this case). Emphasize that each digit would jump to the left two place values instead of 1.
Closing	**Check for Understanding:** • Students will complete the independent problem to allow for CFU. Students should fill in the place value chart and tell how many jelly beans there are in 10 containers of 682 jelly beans. Determine how to proceed with independent work based on your informal data / small group math instruction. • Students will be assigned Relative Value of Place Student Practice - Google Doc. **Reflection**: What happens to the value of a 5 in the tens place when it is multiplied by 10?
Resources	Week 2 Math Slides - 4.NBT.1 & 4.NBT.2 Relative Value of Place Student Practice - Google Doc 4.NBT.1 Kahoot
Credits	