

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 1 of 6	Day 1
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
2.NBT.1 continued <i>Understand the following as special cases:</i> a. 100 can be thought of as a bundle of 10 tens – called a “hundred”. b. The numbers 100, 200, ..900 refer to one, two,....nine hundreds (0 tens and 0 ones).	<ul style="list-style-type: none"> •Understand that 100 can be thought of as a bundle of 10 tens – called a “hundred”. •Understand that each group of 10 tens is equivalent to 1 hundred. •Know that the numbers 100, 200, 300, 400, 500, 600, 700, 800, and 900 refer to one, two, three, four, five, six, seven, eight, nine hundreds (0 tens and 0 ones) 	SMP2 Reason abstractly and quantitatively. SMP5 Use appropriate tools strategically. SMP7 Look for and make use of structure.	<ul style="list-style-type: none"> •How can you represent 100? •How do you group tens as hundreds? •What can you tell about the value of a multiple of 100 (200, 300, ...900)? •How many tens are in 100, 200, 300, ...900?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> •Understand that 10 can be thought of as 10 ones. •Understand that a group of 10 ones is equivalent to 1 ten. 	Equivalent Hundred, tens, ones	When asked how many tens are in a number like 200, the students may not recognize that there are 20 and say 0.	OnCore Lesson 23 Student pages 45 & 46

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to understand that 100 can be thought of as a bundle of 10 tens (10 tens(10 groups of 10) is equivalent to 100). They will help students understand that he numbers 100, 200, 300, ...900 are made up of 1,2,3..9 hundreds, 0 tens, and 0 ones. Have students count by 100 until they reach the desired number. This is also a good time to see if students can tell you how many tens are in 200, 300, ... as well as how many ones. Many kindergarten and grade one teachers review this concept daily during calendar math. As they add a popsicle stick for each day the students bundle the sticks when they have 10. As you have 10 bundles they will now bundle to show 100. Using coins is another way to show this concept. 10 pennies = 1 dime and 10 dimes = 100 pennies or 1 dollar! This is helpful when students add and trade for larger coins.	Students will understand that 100 can be thought of as a bundle of 10 tens and 10 tens (10 groups of 10) is equivalent to 100. They will understand that the numbers 100, 200, ...900 are made up of 1,2 ...9 hundreds, 0 tens, and 0 ones. Students will practice counting by 100 until they reach their desired numbers as the count the number of 100’s. Some students will answer correctly that in a number like 300 there are 30 tens (300 ones) , not zero as the digit in its place represents. Students will practice this standard using Oncore pages 45 & 46, during calendar math in most classrooms, through sorting and trading coins or with any other materials the teacher may discover.

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 2 of 6	Day 2 & 3
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens and 6 ones.</p> <p><i>Note: Special case (a and b were covered in Lesson 1)</i></p>	<ul style="list-style-type: none"> • Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. • Write 3-digit numbers that are represented by groups of tens. • Use concrete and pictorial models to represent 3-digit numbers and use place value concepts to write the 3-digit number being represented. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP5 Use appropriate tools strategically.</p> <p>SMP8 Look for and express regularity in repeated reasoning.</p>	<ul style="list-style-type: none"> • How do you represent a three-digit number with base ten block pictures? • How do you determine how many tens are in a three-digit number? • How do you know the values of the digits in a 3-digit number?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Understand that 2-digit numbers represent tens and ones.	Hundreds, tens, ones Thousand Base-ten blocks	<ul style="list-style-type: none"> • Difficulty understanding that in a number such as 325 there are 32 tens not just 2. • Reading a three digit number with the work and between the digits. For example 243 is read two hundred forty three NOT two hundred <i>and</i> forty three. 	<p>OnCore Lesson 19 – 22 Student pages 37 – 44</p> <p>K-5 Math Resources: Base Ten Concentration (3 Digit)</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students, using place value, to understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. As students are representing the various amounts, it is important that emphasis is placed on the language associated with the quantity. For example, 243 can be expressed in multiple ways such as 2 groups of hundred, 4 groups of ten and 3 ones, as well as 24 tens and 3 ones. When students read numbers, they should read in standard form as well as using place value concepts. For example, 243 should be read as “two hundred forty-three” as well as two hundreds, 4 tens, 3 ones. Remembering not to say and ...not read “ two hundred and forty three...”	Students will understand that the three digits of a 3-digit number represent amounts of hundreds, tens, and ones. They will write 3-digit numbers that are represented by groups of tens. Students will work on using the correct math language associated with the quantities. They will understand that a 3-digit number can be expressed in multiple ways. For example, 243 can be expressed as 2 groups of hundreds, 4 groups of tens and 3 ones, as well as 24 tens and 3 ones. Students will read the three digits numbers correctly without using the word and between the digits. 243 is read two hundred forty three NOT two hundred and forty three. Remember that “and “ is used to read a decimal point. Students will practice using the OnCore students pages and playing the Concentration game.

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 3 of 6	Day 4 & 5
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names and expanded form.	<ul style="list-style-type: none"> •Read and write numbers to 1000 using base-ten numerals, number names and expanded form. •Understand that there are more than one way to read and write numbers with different combinations of tens and ones. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP5 Use appropriate tools strategically.</p>	How does following a pattern help you find all the ways to show a number with different combinations of tens and ones?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Read and write numbers to 100 using place value strategies.		<ul style="list-style-type: none"> •Difficulty understanding that in a number such as 325 there are 32 tens not just 2. •Reading a three-digit number with the work and between the digits. For example 243 is read two hundred forty three NOT two hundred <i>and</i> forty three. 	<p>K-5 Math Resources</p> <p>Number Word Concentration <input type="checkbox"/></p> <p>Representing Numbers in Four Ways</p> <p>Oncore Lesson 30 Student pages 59 – 60</p> <p>EnVision pages (Gr 3 lesson 1-1 Topic 1) pg 38 – 40.</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to read and write numbers to 1000 correctly; using base-ten numerals, number names, and expanded form. They will remind students of the correct way to read and write numbers. (See misconceptions) They will help students write numbers in more than one way using different combinations of tens and ones (continuing from lesson 2). Teachers will be using the K-5 Math Resource Activities and the Oncore lesson 30.	Students will read and write numbers to 1000 using base-ten numerals, number names and expanded form. They will be conscious of reading numbers without the word “and”. (See misconception). Students will write numbers in more than one way using different combinations of tens and ones. They will practice this concept using K-5 Math Activities, OnCore student page and if needed, pages from EnVision that have been provided.

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 4 of 6	Day 6 & 7
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of the comparison.</p>	<ul style="list-style-type: none"> •Compare two three-digit numbers based on meanings of the hundreds, tens and ones. •Use symbols $>$, $=$, $<$ to record comparisons. •Solve comparison problems using the strategy <i>make a model</i>. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP5 Use appropriate tools strategically.</p>	<ul style="list-style-type: none"> •How do you compare 3-digit numbers? •How do you use the symbol $>$, $=$, or $<$ to compare numbers? •How can you make a model to solve a problem about comparing numbers?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> •Understand <i>more than</i>, <i>greater than</i>, and <i>less than</i>. •Use place value to represent 3-digit numbers. 	<p>greater than less than meaning of $>$, $=$, and $<$</p>	<ul style="list-style-type: none"> •Misuse of the comparison symbols. •Difficulty reading the expressions correctly because they only know how to write the symbols based on “the alligators mouth opening”. <i>We have suggested that this strategy not be used in grade 2.</i> 	<p>Oncore Lesson 34 – 35 Student pages 67 – 70 Investigations Snap in Unit 6 Session 5A.2 pg C70 K-5 Math Resources: Comparing 3 Digit Numbers □ Place Value Challenge (3 Digits)</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide students to compare two 3-digit numbers based on the meaning of their hundreds, tens and ones (constructing and drawing simple place value models). Using Oncore Lessons 34. They will help students with the use of the symbols $>$, $=$, and $<$ to compare these numbers. Using Oncore Lesson 35. Teachers will help students understand the meaning of the symbols by asking them to read the expression that results (moving students away from the strategy “alligators mouth opens to the larger number”. Helping students instead to recognize they symbol $<$ as looking more like a “L” for less. For example, $5 > 3$, is read the number 5 is greater than the number 3. Additional K-5 Math Resources may be used if time allows.</p>	<p>Students will compare two 3-digit numbers based on the meaning of their hundreds, tens and ones (and using/drawing simple place value models). They will practice using OnCore student pages 67 & 68 along with the Investigations Snap in pg. C70. Students will compare using the symbols $>$, $=$, or $<$ and then read the result of their comparison correctly from left to right. They will practice using these symbols with OnCore student’s pates 69 & 70.</p>

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 5 of 6	Day 8 - 11
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>4.NBT.5 Fluently <i>add</i> and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<ul style="list-style-type: none"> •Add within 100 using strategies based on place value, properties of operations. •Add using strategies Addition Split (Break apart), Doubles, Near Doubles, and a number line. •Begin to use the standard algorithm by modeling place value. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP5 Use appropriate tools strategically.</p>	<ul style="list-style-type: none"> •How can you model addition using pictures of base ten blocks or a number line? •How does the strategy addition split, near doubles, or the number line help you add two 2-digit numbers?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> •Add and subtract within 20. •Composing and decomposing numbers using place value. •Regroup tens and ones with base-ten models. 	Doubles Near doubles Addition split (breaking apart) Number line Standard algorithm	<ul style="list-style-type: none"> •Regrouping. •Not reading the numbers in their base ten form. 	<p>OnCore Lessons 46 – 48, 36 & 37 Student pages 91 – 96. 71 - 74</p> <p>Investigations <i>Close to 100</i></p> <p>K-5 Math Resources: 2 Digit Addition Split □ Four in a Row with Near Doubles (Ver2) Addition page only: 2 Digit Add. & Subtraction on the Empty Number Line</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide students to add within 100. They will introduce different strategies based on place value, properties of operations. Some strategies include addition split (break apart), compensation and the use of a number line. Teachers will introduce the standard algorithm by modeling place value with base 10 blocks, at the same time. They may use the K-5 Math Resources, OnCore Lessons 46-48, then 36 & 37 or have the students play the game Close to 100 and discuss the strategies they use to mentally add. <i>Note: Understanding and the use of different strategies for addition is still important, the standard algorithm will be introduced again in the 4th quarter.</i></p>	<p>Students will add within 100 using strategies based on place value and properties of operations that include addition split (break apart), compensation, and the use of a number line. They will be introduced to the standard algorithm for addition and how it relates to place value modeling of base ten blocks. It is important that students continue to work on different strategies for addition to build their understanding of this concept. Practice with mental math strategies as they play Close to 100 is an excellent way to improve fluency. They will utilize OnCore and K-5 Math Resources for practice.</p>

Grade 2

Unit 2.3	Unit Title Composing, Decomposing, and Comparing Numbers Using Place Value	Lesson 6 of 6	Day 12 - 14
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>4.NBT.5 Fluently add and <i>subtract</i> within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<ul style="list-style-type: none"> • Subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Use a number line and the strategy of break apart numbers to help with subtraction. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP5 Use appropriate tools strategically.</p>	<ul style="list-style-type: none"> • How can you model subtraction using pictures of base ten blocks or a number line? • How does breaking apart a number help with subtraction?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> • Composing and decomposing numbers using place value. • Subtract by breaking apart a 1-digit subtrahend (number being subtracted). 	<p>Number line</p> <p>Break apart (splitting) a number</p> <p>Base ten block picture</p> <p>Standard algorithm</p>	<p>Usually result from difficulty with place value.</p>	<p>OnCore Lessons 39 – 43, 45</p> <p>Student pages 77 – 86, 89 & 90</p> <p>K-5 Math Resources</p> <p>2 Digit Subtraction Split</p> <p>2 Digit Add. & Subtraction on the Empty Number Line</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide students to subtract within 100 using strategies based on place value, properties of operations, splitting numbers, and the number line. They will utilize OnCore Lessons 39 – 40 and the K-5 Math Resources. Teachers will help students understand the relationship between addition and subtractions as the guide students to add to find the differences (OnCore Lesson 45). Using OnCore lessons 41 - 43 teachers will introduce the standard algorithm for subtraction as it relates to the place value model of base ten blocks.</p> <p><i>Note: Understanding and the use of different strategies for subtraction is still important, the standard algorithm will be introduced again in the 4th quarter .</i></p>	<p>Students will subtract within 100 using strategies based on place value, properties of operations, splitting numbers, and the number line. They will practice these strategies using OnCore pages 77 – 80 and the K-5 Math Resources. They will understand the relationship between addition and subtraction as they add to find the difference using pages 89 & 90. Students will be introduced to the standard algorithm for subtraction as it compares to the place value modeling of base ten blocks using pages 81 – 86. They will continue to practice strategies for understanding and will revisit the standard algorithm at the end of the 4th quarter.</p>