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| **Prerequisite Skills**  | **Unit Three Standards** **Grade 2** | **Looking Ahead**  |
| I can solve one-step word problems with numbers within 20 using addition and subtraction (Unit 1). | Operations and Algebraic Thinking 1: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions. * I can identify the action in a one-step problem.
* I can solve one-step word problems with numbers **within 100** using addition and subtraction.
* I can identify both actions in a two-step problem.
* I can solve two-step word problems with numbers **within 20** using addition and subtraction.
 | I can solve one-step and two-step word problems with numbers within 100 using addition and subtraction (Unit 4). |
| Foundational Facts: +1/+2, +0, +10, Doubles, Making 10, Using 10s, Using Doubles (Unit 1). | Operations and Algebraic Thinking 2: **Fluently** add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. * I can fluently add within 20 using mental strategies.
* I can fluently subtract within 20 using mental strategies.

**\*This standard must only be taught in small group/centers in Unit 3 depending on student need.** | This standard needs to be repeated throughout Grade 2 in small group work and centers. |
| Work with addition and subtraction equations.Repeated addition. | Operations and Algebraic Thinking 4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. Write an equation to express the total as a sum of equal addends. * Given an array, I can write an addition equation to show the sum of the objects (repeated addition).
 | Understand the properties of multiplication.  |
| Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. Understand that the two digits of a two-digit number represent amounts of tens and ones.  | Number and Operations in Base Ten 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. Understand the following as special cases:1. 100 can be thought of as a bundle of ten tens – called a “hundred.”
2. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and zero tens and zero ones.)
* I can identify how many ones, tens and/or hundreds are in a number.
* I can identify that a bundle (group) of ten tens makes a hundred.
* I can identify how many hundreds, tens, and ones are in a multiple of one hundred.
 | Use place value understanding and properties of operations to perform multi-digit arithmetic. |
| I can skip-count by 5’s (Unit 1) | Number and Operations in Base Ten 2: Count within 1000; skip-count by 5s, 10s and 100s. * I can count within 1000.
* I can skip-count by 5s, 10s and 100s to 1000.
 | Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between . |
| Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.  | Number and Operations in Base Ten 3: Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.* I can read and write numbers to 1,000.
* I can read and write number names (words) to 1,000.
* I can read and write numbers up to 1,000 in expanded form.
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| Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.  | Number and Operations in Base Ten 4: Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.* I can compare 3-digit numbers by looking at the hundreds, tens and ones digits.
* I can use the symbols >, <, and = to compare 3-digit numbers.
 | Use place value understanding and properties of operations to perform multi-digit arithmetic. |

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| **Prerequisite Skills**  | **Unit Three Standards (Continued)** **Grade 2** | **Looking Ahead**  |
| Understand and apply properties of operations and the relationship between addition and subtraction.Add and subtract within 20. Use place value understanding and properties of operations to add and subtract. | Number and Operations in Base Ten 8: Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.* I can mentally add 10 to a 3-digit number.
* I can mentally subtract 10 from a 3-digit number.
* I can mentally add 100 to a 3-digit number.
* I can mentally subtract 100 from a 3-digit number.
 | Use place value understanding and properties of operations to perform multi-digit arithmetic. |
| Number and Operations in Base Ten 9: Explain why addition and subtraction strategies work, using place value and the properties of operations.* I can explain what strategy I used to solve my problem.
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| I can count money combinations including quarters, dimes, nickels, and pennies under a dollar (Unit 2).I can write money amounts using the symbols $ and ¢ (Unit 2). | Measurement and Data 8: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?** I can count money combinations including dollars, quarters, dimes, nickels, and pennies.
* I can write money amounts using the symbols $ and ¢.
 | I can solve word problems using dollars, quarters, dimes, nickels and pennies (Unit 4). |

\*In standards that are repeated in several units, the I Can Statements represent a progression of skills to scaffold learning.

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| **Standard** | **Learner Objectives** |
| Operations and Algebraic Thinking 1: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions.  | * I can identify the action in a one-step problem.
* I can solve one-step word problems with numbers **within 100** using addition and subtraction.
* I can identify both actions in a two-step problem.
* I can solve two-step word problems with numbers **within 20** using addition and subtraction.
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| **What does this standard mean the students will know and be able to do?** |
| One-step word problems use one operation. Two-step word problems use two operations which may include the same operation or the opposite operation.By solving a variety of addition and subtraction word problems, second grade students will determine the unknown in all positions.**Number values should be within 100 for the one-step problems in Unit Two. Number values should be within 20 for the two-step problems in Unit Two.** |
| **One Step Word Problem** One Operation | **Two-Step Word Problem** Two Operations, Same | **Two-Step Word Problem**Two Operations, Opposite |
| There are 45 stickers on the page. Brittany put some more stickers on the page. There are now 12 stickers on the page. How many stickers did Brittany put on the page?45 + ? = 1245 – 12 = ? | There are 9 blue marbles and 6 red marbles in the bag. Maria put in 8 more marbles. How many marbles are in the bag now?9 + 6 + 8 = ? | There are 9 peas on the plate. Carlos ate 5 peas. Mother put 7 more peas on the plate. How many peas are on the plate now?9 – 5 + 7 = ? |
| **Example Problem Types** |
| **Add to Result Unknown**  | **Take From, Result Unknown**  | **Put Together/Take Apart, Total Unknown** | **Compare, Difference Unknown** | **Add to, Change Unknown** | **Take From, Change Unknown** |
| Mary has 5 cookies. She buys 10 more cookies at the store. How many cookies does Mary have?5 + 10 = ? | Mary has 15 cookies. She ate 5 cookies at lunch. How many cookies does she have left?15 – 5 = ? | Mary has 5 chocolate chip and 10 sugar cookies. How many cookies does Mary have?5 + 10 = ? | Mary has 15 cookies. Joe has 5 cookies. How many more cookies does Mary have than Joe?15 - 5= ? 5 + ? = 15 | Mary has 5 cookies. She buys some more cookies at the store. Now she has 15 cookies. How many cookies did Mary buy at the store? 5 + ? = 15 | Mary has 15 cookies. She ate some cookies at lunch. Now she has 10 cookies. How many cookies did Mary eat at lunch?15 - ? = 10 |
| **Put Together, Take Apart Addend Unknown** | **Compare, Bigger Unknown** | **Add to, Start Unknown** | **Take From Start Unknown** | **Put Together, Take Apart, Both Addends Unknown** | **Compare, Smaller Unknown** |
| Mary has 5 chocolate chip cookies and some sugar cookies. All together she has 15 cookies. How many sugar cookies does Mary have?5 + ? = 15 | Mary has 15 cookies. Joe has 5 more cookies than Mary. How many cookies does Joe have?15 + 5 = ? | Mary has some cookies. She bought 10 cookies at the store. Now she has 15 cookies. How many cookies did she have before she went to the store?? + 10 = 15 | Mary had some cookies. At lunch she at 5. Now she has 10 cookies. How many cookies did she have before lunch?? – 5 = 10 | Mary has 15 cookies. What are some different ways she can put them on 2 plates?8 + 7 = 15 , 7 + 8 = 1510 + 5 = 15, 9 + 6 = 1515 = 15 + 0, 14 + 1 = 15 | Mary has 15 cookies. She has 5 more cookies than Joe. How many cookies does Joe have?15 – 5 = ? |

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| **Lessons and Resources for Operations in Algebraic Thinking 1** |
| Expressions: Unit 5 – Lesson 9, Activity 1 (pg 367-368) | Expressions: Unit 5 – Lesson 6, Activity 2 (pg 351) |
| [Open Number Line](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Open%20Number%20Line.pdf) | [Addition and Subtraction Puzzles](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Addition%20and%20Subtraction%20Puzzles.pdf) |

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| **Emphasized Standards for Mathematical Practice** |
| [1. Make sense of problems and persevere.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them1.html)  | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html)  | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others1.html)  |
| [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics1.html)  | [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html)  | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html)  |

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| **Standard** | **Learner Objectives** |
| Operations and Algebraic Thinking 2: **Fluently** add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.  | * I can fluently add within 20 using mental strategies.
* I can fluently subtract within 20 using mental strategies.
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**\*This standard must only be taught in small group/centers in Unit 3 depending on student need.**

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| **What does this standard mean the students will know and be able to do?** |
| Second Graders internalize facts and develop fluency by repeatedly using strategies that make sense to them. This standard mentions the word fluently when students are adding and subtracting numbers within 20. Fluency means accuracy (correct answer), efficiency (within 4-5 seconds), and flexibility (using strategies such as making 10 or breaking apart numbers). Research indicates that teachers’ can best support students’ memorization of sums and differences through varied experiences making 10, breaking numbers apart and working on mental strategies, rather than repetitive timed tests. |
| **Foundational Facts** |
| **+1/+2** | **+0** | **+10** | **Doubles** | **Making Ten** | **Using Tens** | **Using Doubles** |
| Deryn took 5 bites of an apple. Then she took 1 more bite. How many bites did she take? | 4 boys were at the math center. No girls were at the math center. How many students were at the math center? | If your cookie had 4 chips, how many chips would your cookie have if you added 10? | His pigs are very muddy. He uses 3 bars of soap to bathe them. How many bars of soap will he use if we double the pigs? | There were 10 apples in the basket. What if you dropped 3? How many apples are left? | Yesterday, Farmer Brown gathered 9 eggs from the hen house. Today, he gathered 4 more. How many eggs did he gather all together? | There were 5 spotted fish and 6 fantail fish. How many fish were there altogether? |

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| **Lessons and Resources for Operations in Algebraic Thinking 2** |
| Mastering the Basic Facts in Addition and Subtraction: [Chapter 2: Plus 1 and Plus 2](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%202%20Plus%201%20Plus%202.pdf) | Mastering the Basic Facts in Addition and Subtraction: [Chapter 3: Adding 0](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%203%20Adding%200.pdf) | Mastering the Basic Facts in Addition and Subtraction: [Chapter 4: Adding 10](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%204%20Adding%2010.pdf) | Mastering the Basic Facts in Addition and Subtraction: [Chapter 5: Doubles](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%205%20Doubles.pdf) |
| Mastering the Basic Facts in Addition and Subtraction: [Chapter 6: Making 10](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/Basic%20Fact%20Books%20O%27Connell/Addition%20and%20Subtraction/Chapter%206%20Making%2010.pdf) | Mastering the Basic Facts in Addition and Subtraction: [Chapter 7: Using 10s](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%207%20Using%2010s.pdf) | Mastering the Basic Facts in Addition and Subtraction: [Chapter 8: Using Doubles](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Chapter%208%20Using%20Doubles.pdf) | Developing Number Sense Book 2 by Kathy Richardson |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html)  | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html)  | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html)  |

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| **Standard** | **Learner Objective** |
| Operations and Algebraic Thinking 4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. Write an equation to express the total as a sum of equal addends.  | * Given an array, I can write an addition equation to show the sum of the objects (repeated addition).
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to use rectangular arrays to work with repeated addition. This is a building block for multiplication in 3rd Grade. Students should explore this concept with concrete objects (e.g., counters, bears, square tiles, etc.) as well as pictorial representations on grid paper or other drawings. Based on the commutative property of addition, students can add either the rows or the columns and still arrive at the same solution. |
| **Example: What is the total number of circles below?**

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| **●** | **●** | **●** | **●** |
| **●** | **●** | **●** | **●** |
| **●** | **●** | **●** | **●** |

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| **Student A** | **Student B** |
| I see 3 counters in each column and there are 4 columns. So I added 3 + 3 + 3 + 3. That equals 12.  | I see 4 counters in each row and there are 3 rows. So I added 4 + 4 + 4. That equals 12.  |
| 3 + 3 + 3 + 3 = 12 | 4 + 4 + 4 = 12 |

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| **Lessons and Resources for Operations in Algebraic Thinking 4** |
| Expressions: Unit 13 – Lesson 4, Activity 2 (pg 975-976) |  |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html)  | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others1.html)   | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html)  | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html) |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 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. Understand the following as special cases:a. 100 can be thought of as a bundle of ten tens – called a “hundred.”b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and zero tens and zero ones.) | * I can identify how many ones, tens and/or hundreds are in a number.
* I can identify that a bundle (group) of ten tens makes a hundred.
* I can identify how many hundreds, tens, and ones are in a multiple of one hundred.
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to work on decomposing numbers by place value. Students should have ample experiences examining that numbers all numbers between 100 and 999 can be decomposed into hundreds, tens, and ones. Interpret the value of a digit (1-9 and 0) in a multi-digit numeral by its position within the number with models, words and numerals. Use 10 as a benchmark number to compose and decompose when adding and subtracting whole numbers. 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.  |
| **NBT 1a:** | **NBT 1b:** |
| Calls for students to extend their work from 1st Grade by exploring a hundred as a unit (or bundle) of ten tens. | Students should explore the idea that numbers such as 100, 200, 300, etc., are groups of hundreds that have no tens or ones. Students can represent this with place value (base 10) blocks. |

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| **Lessons and Resources for Number and Operations in Base Ten 1** |
| Expressions: Unit 5 – Lesson 5 (pg 342 & 343) | Expressions: Unit 11 – Lesson 1,Activity 2 (pg757-760) | Expressions: Unit 11 – Lesson 9 (pg 810) | Expressions: Unit 5 – Lesson 6 (pg 350 & 351) |
| Expressions: Unit 5 – Lesson 1 (pg 310-311) | Expressions: Unit 5 – Lesson 3, Activity 1-3 (pg 326-328) | [Digit Switcher](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Digit%20Switcher.pdf) | [Three Digit Shuffle](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Three%20Digit%20Shuffle.pdf) |
| [Pick Up Sticks](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Pick%20up%20Sticks.pdf) | [Thinking About Place Value](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Thinking%20about%20Place%20Value.pdf) | [Different Ways to Make the Same Number](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Different%20Ways%20to%20Make%20the%20Same%20Number.pdf) |  |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html) |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 2: Count within 1000; skip-count by 5s, 10s and 100s.  | * I can count within 1000.
* I can skip-count by 5s, 10s and 100s to 1000.
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to count within 1,000. This means that students are expected to “count on” from any number and say the next few numbers that come afterwards. Understand that counting by 2s, 5s and 10s is counting groups of items by that amount. Students need many opportunities counting, up to 1000, from different starting points. They should also have many experiences skip counting by 5s, 10s, and 100s to develop the concept of place value. The ultimate goal for second graders is to be able to count in multiple ways with no visual support.This standard also introduces skip counting by 5s and 100s. Students are introduced to skip counting by 10s in First Grade. Students should explore the patterns of numbers when they skip count. When students skip count by 5s, the ones digit alternates between 5 and 0. When students skip count by 100s, the hundreds digit is the only digit that changes, and it increases by one number. |
| **Examples** |
| What are the next 3 numbers after 498?*499, 500, 501* | When you count back from 201, what are the first 3 numbers that you say? *200, 199, 198*  | The use of the 100s chart may be helpful for students to identify the counting patterns. | The use of money (nickels, dimes, dollars) or base ten blocks may be helpful visual cues. |

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| **Lessons and Resources for Number and Operations in Base Ten 2** |
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| Expressions: Unit 11, Activity Card Challenge (Page 775-776) | [Jump-A-Hundred](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Jump%20a%20Hundred.pdf) |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) |  |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 3:  Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. | * I can read and write numbers to 1,000.
* I can read and write number names (words) to 1,000.
* I can read and write numbers up to 1,000 in expanded form.
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to read, write and represent a number of objects with a written numeral (number form or standard form). These representations can include place value (base 10) blocks, pictorial representations or other concrete materials. Remember that when reading and writing whole numbers, the word ―and” should not be used. |
| **Standard Form** | **Written Form** | **Expanded Notation** |
| 637 | Six hundred thirty seven | 600 + 30 + 7 |

\*When students say the expanded form it may sound like: “6 hundreds plus 3 tens plus 7 ones” or “600 plus 30 plus 7.”

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| **Lessons and Resources for Number and Operations in Base Ten 3** |
| Expressions: Unit 11 – Lesson 3, Going Futher (pg 774) | Expressions: Unit 11 – Lesson 2, Class Activity (pg 768) | Expressions: Unit 5 – Lesson 3, Activity 4 (pg 329-330) | [Large Numbers](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Large%20Numbers.pdf) |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html)   | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html) |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 4: Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. | * I can compare 3-digit numbers by looking at the hundreds, tens and ones digits.
* I can use the symbols >, <, and = to compare 3-digit numbers.
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| **What does this standard mean the students will know and be able to do?** |
| This standard builds on the work of NBT.1 and NBT.3 by having students compare two numbers by examining the amount of hundreds, tens and ones in each number. Students are introduced to the symbols greater than (>), less than (<) and equal to (=) in First Grade, and use them in Second Grade with numbers within 1,000. To compare, students apply their understanding of place value. They first attend to the numeral in the hundreds place, then the numeral in tens place, then, if necessary, to the numeral in the ones place. Students should have ample experiences communicating their comparisons in words before using only symbols in this standard. Comparative language includes but is not limited to: more than, less than, greater than, most, greatest, least, same as, equal to and not equal to. Students use the appropriate symbols to record the comparisons. |
| **Example: Compare 452 \_\_\_ 455** |
| **Student A - Place Value**452 has 4 hundreds 5 tens and 2 ones. 455 has 4 hundreds 5 tens and 5 ones. They have the same number of hundreds and the same number of tens, but 455 has 5 ones and 452 only has 2 ones. 452 is less than 455 and therefore, 452 < 455 | **Student B – Counting**Counting452 is less than 455.I know this because when I count up I say 452 before I say 455.452 < 455 and therefore, 452 is less than 455. |

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| **Lessons and Resources for Number and Operations in Base Ten 4** |
| Expressions: Unit 7 – Lesson 3, Activity 3 (pg 502) | [Will the Real Value Stand Up? (only to hundreds)](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Will%20the%20Real%20Number%20Stand%20Up.pdf)  | [Numerals in the News](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Numeral%20in%20the%20News.pdf)  |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html)  |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 8: Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. | * I can mentally add 10 to a 3-digit number.
* I can mentally subtract 10 from a 3-digit number.
* I can mentally add 100 to a 3-digit number.
* I can mentally subtract 100 from a 3-digit number.
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to mentally add or subtract multiples of 10 or 100 to any number between 100 and 900. Students should have ample experiences working with the concept of adding and subtracting multiples of 10 or 100 that you are only changing the tens place (multiples of ten) or the digit in the hundreds place (multiples of 100). In this standard, problems that require students to move from 10’s to 100’s should be included. Example: 273 + 60 = 333. Students need many opportunities to practice mental math by adding and subtracting multiples of 10 and 100 up to 900 using different starting points. They can practice this by counting and thinking aloud, finding missing numbers in a sequence, and finding missing numbers on a number line or hundreds chart. Explorations should also include looking for relevant patterns. |
| **Mental Math Strategies + Examples** |
| **Counting on**300, 400, 500, 600, etc… | **Counting Back**550, 450, 350, etc… | **Example A**100 more than 653 is \_\_\_\_? (753) | **Example B**10 less than 87 is \_\_\_\_? (77) | **Example C**Start at 248. Count up by 10s until I tell you to stop. |

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| **Lessons and Resources for Number and Operations in Base Ten 8** |
| Expressions: Unit 11 – Activity Card – On Level (pg 775) |  |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html) |

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| **Standard** | **Learner Objectives** |
| Number and Operations in Base Ten 9: Explain why addition and subtraction strategies work, using place value and the properties of operations. | * I can explain what strategy I used to solve my problem.
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| **What does this standard mean the students will know and be able to do?** |
| This standard calls for students to explain using concrete objects, pictures and words (oral or written) why addition or subtraction strategies work. The expectation is that students apply their knowledge of place value and the properties of operations in their explanation. Students should have the opportunity to solve problems and then explain why their strategies work. |
| **Example:** **There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.** |
| **Student A** I broke 36 and 25 into tens and ones and then added them. 30 + 6 + 20 + 5. I can change the order of my numbers, so I added 30+20 and got 50. Then I added on 6 to get 56. Then I added 5 to get 61. This strategy works because I broke all the numbers up by their place value. | **Student B**I used place value blocks and made a pile of 36. Then I added 25. I had 5 tens and 11 ones. I had to trade 10 ones for a 10. Then I had 6 tens and 1 one. That makes 61. This strategy works because I added up the tens and then added up the ones and traded if I had more than 10 ones. |
| **Students could also have experiences examining strategies and explaining why they work. Also include incorrect examples for students to examine. Operations embedded within meaningful context promote development of reasoning and justification.** |
| **Example A**One of your classmates solved the problem 56 - 34 = \_\_ by writing ―I know that I need to add 2 to the number 4 to get 6. I also know that I need to add 20 to 30 to get 20 to get to 50. So, the answer is 22.‖ Is their strategy correct? Explain why or why not? | **Example B**One of your classmates solved the problem 25 + 35 by adding 20 + 30 + 5 + 5. Is their strategy correct? Explain why or why not? |

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| **Lessons and Resources for Number and Operations in Base Ten 9** |
| Expressions: Unit 5 – Lesson 2, Activity 1 (pg 318-322) | [CGI – Addition and Subtraction Story Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/CGI%20Addition%20and%20Subtraction%20Story%20Bank.docx) | Expressions: Unit 9 – Lesson 3, Activity 1 (pg 620) |

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| **Emphasized Standards for Mathematical Practice** |
| [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others1.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics1.html) |
| [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html) |

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| **Standard** | **Learner Objective** |
| Measurement and Data 8:  Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?* | * I can count money combinations including dollars, quarters, dimes, nickels, and pennies.
* I can write money amounts using the symbols $ and ¢.
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| **What does this standard mean the students will know and be able to do?** |
| In Second Grade, students have not been introduced to decimals, problems focus on whole dollar amounts or cents. Students will need numerous experiences with coin recognition and values of coins (Unit One) before using coins to solve problems. Once students are solid with coin recognition and values, they can then begin using the values coins to count sets of coins, compare two sets of coins, make and recognize equivalent collections of coins (same amount but different arrangements), select coins for a given amount, and make change. As teachers provide students with sufficient opportunities to explore coin values (25 cents) and actual coins (2 dimes, 1 nickel), teachers will help guide students over time to learn how to mentally give each coin in a set a value, place the random set of coins in order and use mental math, adding on to find differences, and skip counting to determine the final amount. |

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| **Lessons and Resources for Measurement and Data 8** |
| Expressions: Unit 5 – Lesson 15, Activity 1 & 2 (pg 404) | Expressions: Unit 5 – Lesson 16, Activity 1 & 2 (pg 410) | Expressions: Unit 9 – Lesson 2 activity cards (617) | [Counting Coins/Dollars](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Counting%20Coins%20and%20Dollars.pdf) |

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| **Emphasized Standards for Mathematical Practice** |
| [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them1.html)  | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively2.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics1.html)  |
| [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html) | [6. Attend to precision](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning3.html)  |

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**Optional Whole Group Lesson Progression**

Unit Pacing: 6 Weeks

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| **Resource** | **Location** | **Primary Focus** | **Standard** |
| **Throughout Unit 3 encourage students to use proof drawings and manipulatives with addition and subtraction number sentences** |
| Expressions | Unit 5, Lesson 1 (Pages 310-311) | * Students will be able to identify the ones, tens and hundreds place value in a given number
* Students will be able to identify the value of a given number
* Students will be reading and writing numbers
 | NBT.1 |
| Expressions | Unit 5, Lesson 3, Activities 1-3 (Pages 326-328) |
| Quantiles.com | [Different Ways to Make the Same Number](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Different%20Ways%20to%20Make%20the%20Same%20Number.pdf) | * Representing numbers in both model and numeric form
* Students will be reading and writing numbers
 | NBT.1  |
| Expressions | Unit 5, Lesson 5 (Pages 342-343)  | * Using decade partners to represent 10s and 100s
 | NBT.1 |
| Expressions | Unit 5, Lesson 6 (Pages 350-351) | * Using number cards create numbers in expanded form
* Identifying 10s and 1s in story problem format
* Students will be reading and writing numbers
 | NBT.1 |
| Expressions  | Unit 11, Lesson 1 (Pages 757-760) | * Represent 3-Digit Numbers
 | NBT.1 |
| Quantiles.com | [Digit Switcher](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Digit%20Switcher.pdf) | * Use place value with 100s to read and write numbers
* Students will be reading and writing numbers
 | NBT.1  |
| Quantiles.com | [Three Digit Shuffle](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Three%20Digit%20Shuffle.pdf) |
| Quantiles.com | [Pick up Sticks](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Pick%20up%20Sticks.pdf) | * Make bundles of ten-and connecting place value models with their numeric value
 | NBT.1  |
| Quantiles.com | [Thinking about Place Value](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Thinking%20about%20Place%20Value.pdf) | * Using activities 3 & 4 identify the digit in each place value
* Students will be reading and writing numbers
 | NBT.1 |
| Expressions | Unit 5, Lesson 3, Activity 4 (Page 329) | * Review word names for numbers
 | NBT.3 |
| Expressions | Unit 11, Lesson 2 (page 768) | * Write numbers in standard and expanded form
* Students will be reading and writing numbers
 | NBT.3 |
| Quantiles.com | [Large Numbers](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Large%20Numbers.pdf) |
| Expressions | Unit 11, Lesson 3 (page 774) | * Read and write word names for numbers
 | NBT.3 |
| Quantiles.com | [Will the Real Value Stand Up?](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Will%20the%20Real%20Number%20Stand%20Up.pdf) | * Writing numbers in expanded form
* Students will be reading and writing numbers
 | NBT.3  |
| Expressions | Unit 11, Lesson 3 , Activity Card Challenge (Page 775) | * Review skip counting by 5s &10
* Mentally add/subtract by 10s and 100s
* Starting at any number continue skip counting
 | NBT.2NBT.8 |
| Quantiles.com | [Jump-A-Hundred](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Jump%20a%20Hundred.pdf) | * Use place value to skip count
 | NBT.2  |
| Expressions | Unit 7, Lesson 3, Activity 3 (Page 502) | * Use the symbols <,>, and = to compare 3 digit numbers
 | NBT.4 |
| Quantiles.com | [Numerals in the News](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Numeral%20in%20the%20News.pdf) | * Compare and Orders Numbers
 | NBT.4  |
| Developing Number Concepts Addition and Subtraction- KR | [Number Arrangements using cubes (Pages 77-80)](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Number%20Arrangements%20Using%20Cubes.pdf) | * Creating addition arrays with the addition equation to show the sum
 | OA.4 |
| Expressions | Unit 9, Lesson 3 Activity 1 (page 620) | * Methods for finding unknown partners (encouraged to stick with proof drawings, number lines and manipulatives at this stage to develop conceptual understanding)
 | NBT.9 |
| Quantiles.com | [Open Number Line](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Open%20Number%20Line.pdf) | * Using number lines to add numbers
 | OA.1 |
| Expressions | Unit 5, Lesson 2 Activity 2 (page 318) | * Draw numbers to 200 using equations (encouraged to stick with proof drawings, number lines and manipulatives at this stage to develop conceptual understanding)
 | NBT.9 |
| Problem Types on the Curriculum Guide page 3 | [CGI – Addition and Subtraction Story Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/CGI%20Addition%20and%20Subtraction%20Story%20Bank.docx) | * Using the CGI problem bank teach the problem types listed on page 3 of the curriculum guide (encouraged to stick with proof drawings, number lines and manipulatives at this stage to develop conceptual understanding)
* Identify the actions in two-step story problems
* Solve two step story problems within 20 using addition and subtraction
 | OA.1 |
| Expressions | Unit 5, Lesson 9 Activity 2 (page 368) | * Invent a method for solving 2 digit addition problems (encouraged to stick with proof drawings, number lines and manipulatives at this stage to develop conceptual understanding)
 | OA.1 |
| Quantiles.com | [Addition and Subtraction Puzzles](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/2nd%20Grade/Unit%203/Addition%20and%20Subtraction%20Puzzles.pdf) | * Story problem involving addition and subtraction (encouraged to stick with proof drawings, number lines and manipulatives at this stage to develop conceptual understanding)
 | OA.1 |

**\*Unit pacing is an approximate. Some lessons may take more than one day. Use teacher discretion based on student need when planning unit length.**