North Carolina Department of Public Instruction
# INSTRUCTIONAL SUPPORT TOOLS
FOR ACHIEVING NEW STANDARDS

***2nd Grade Mathematics*** ● Unpacked Contents
For the new Standard Course of Study that will be effective in all North Carolina schools in the 2018-19 School Year.

This document is designed to help North Carolina educators teach the 2nd Grade Mathematics Standard Course of Study. NCDPI staff are continually updating and improving these tools to better serve teachers and districts.

**What is the purpose of this document?**
The purpose of this document is to increase student achievement by ensuring educators understand the expectations of the new standards. This document may also be used to facilitate discussion among teachers and curriculum staff and to encourage coherence in the sequence, pacing, and units of study for grade-level curricula. This document, along with on-going professional development, is one of many resources used to understand and teach the NC SCOS.

**What is in the document?**
This document includes a detailed clarification of each standard in the grade level along with a *sample* of questions or directions that may be used during the instructional sequence to determine whether students are meeting the learning objective outlined by the standard. These items are included to support classroom instruction and are not intended to reflect summative assessment items. The examples included may not fully address the scope of the standard. The document also includes a table of contents of the standards organized by domain with hyperlinks to assist in navigating the electronic version of this instructional support tool.

**How do I send Feedback?**
Please send feedback to us at feedback@dpi.state.nc.us and we will use your input to refine our unpacking of the standards. Thank You!

**Just want the standards alone?**
You can find the standards alone at http://www.ncpublicschools.org/curriculum/mathematics/scos/.

# North Carolina Course of Study – 2nd Grade Standards

Standards for Mathematical Practice

| Operations & Algebraic Thinking | Number & Operations in Base Ten | Measurement and Data | Geometry |
|---|---|---|---|
| *Represent and solve problems*<br>NC.2.OA.1<br>*Add and subtract within 20.*<br>NC.2.OA.2<br>*Work with equal groups.*<br>NC.2.OA.3<br>NC.2.OA.4 | *Understand place value.*<br>NC.2.NBT.1<br>NC.2.NBT.2<br>NC.2.NBT.3<br>NC.2.NBT.4<br>*Use place value understanding and properties of operations.*<br>NC.2.NBT.5<br>NC.2.NBT.6<br>NC.2.NBT.7<br>NC.2.NBT.8 | *Measure and estimate lengths.*<br>NC.2.MD.1<br>NC.2.MD.2<br>NC.2.MD.3<br>NC.2.MD.4<br>*Relate addition and subtraction to length.*<br>NC.2.MD.5<br>NC.2.MD.6<br>*Build understanding of time and money.*<br>NC.2.MD.7<br>NC.2.MD.8<br>*Represent and interpret data.*<br>NC.2.MD.10 | *Reason with shapes and their attributes.*<br>NC.2.G.1<br>NC.2.G.3 |

**Standards for Mathematical Practice**

| Practice | Explanation and Example |
|---|---|
| 1. Make sense of problems and persevere in solving them. | Mathematically proficient students in Second Grade examine problems and tasks, can make sense of the meaning of the task and find an entry point or a way to start the task. Second Grade students also develop a foundation for problem solving strategies and become independently proficient on using those strategies to solve new tasks. In Second Grade, students' work continues to use concrete manipulatives and pictorial representations as well as mental mathematics. Second Grade students also are expected to persevere while solving tasks; that is, if students reach a point in which they are stuck, they can reexamine the task in a different way and continue to solve the task. Lastly, mathematically proficient students complete a task by asking themselves the question, "Does my answer make sense?" |
| 2. Reason abstractly and quantitatively. | Mathematically proficient students in Second Grade make sense of quantities and relationships while solving tasks. This involves two processes- decontexualizing and contextualizing. In Second Grade, students represent situations by decontextualizing tasks into numbers and symbols. For example, in the task, "There are 25 children in the cafeteria and they are joined by 17 more children. How many students are in the cafeteria? " Second Grade students translate that situation into an equation, such as: 25 + 17 = __ and then solve the problem. Students also contextualize situations during the problem solving process. For example, while solving the task above, students can refer to the context of the task to determine that they need to subtract 19 since 19 children leave. The processes of reasoning also other areas of mathematics such as determining the length of quantities when measuring with standard units. |
| 3. Construct viable arguments and critique the reasoning of others. | Mathematically proficient students in Second Grade accurately use definitions and previously established solutions to construct viable arguments about mathematics. During discussions about problem solving strategies, students constructively critique the strategies and reasoning of their classmates. For example, while solving 74 - 18, students may use a variety of strategies, and after working on the task, can discuss and critique each others' reasoning and strategies, citing similarities and differences between strategies. |
| 4. Model with mathematics. | Mathematically proficient students in Second Grade model real-life mathematical situations with a number sentence or an equation, and check to make sure that their equation accurately matches the problem context. Second Grade students use concrete manipulatives and pictorial representations to provide further explanation of the equation. Likewise, Second Grade students are able to create an appropriate problem situation from an equation. For example, students are expected to create a story problem for the equation 43 + 17 = ___ such as "There were 43 gumballs in the machine. Tom poured in 17 more gumballs. How many gumballs are now in the machine?" |
| 5. Use appropriate tools strategically. | Mathematically proficient students in Second Grade have access to and use tools appropriately. These tools may include snap cubes, place value (base ten) blocks, hundreds number boards, number lines, rulers, and concrete geometric shapes (e.g., pattern blocks, 3-d solids). Students also have experiences with educational technologies, such as calculators and virtual manipulatives, which support conceptual understanding and higher-order thinking skills. During classroom instruction, students have access to various mathematical tools as well as paper, and determine which tools are the most appropriate to use. For example, while measuring the length of the hallway, students can explain why a yardstick is more appropriate to use than a ruler. |
| 6. Attend to precision. | Mathematically proficient students in Second Grade are precise in their communication, calculations, and measurements. In all mathematical tasks, students in Second Grade communicate clearly, using grade-level appropriate vocabulary accurately as well as giving precise explanations and reasoning regarding their process of finding solutions. For example, while measuring an object, care is taken to line up the tool correctly in order to get an accurate measurement. During tasks involving number sense, students consider if their answer is reasonable and check their work to ensure the accuracy of solutions. |
| 7. Look for and make use of structure. | Mathematically proficient students in Second Grade carefully look for patterns and structures in the number system and other areas of mathematics. For example, students notice number patterns within the tens place as they connect skip count by 10s off the decade to the corresponding numbers on a 100s chart. While working in the Numbers in Base Ten domain, students work with the idea that 10 ones equals a ten, and 10 tens equals 1 hundred. In addition, Second Grade students also make use of structure when they work with subtraction as missing addend problems, such as 50- 33 = __ can be written as 33+ __ = 50 and can be thought of as," How much more do I need to add to 33 to get to 50?" |

| | |
|---|---|
| 8. Look for and express regularity in repeated reasoning. | Mathematically proficient students in Second Grade begin to look for regularity in problem structures when solving mathematical tasks. For example, after solving two digit addition problems by decomposing numbers (33+ 25 = 30 + 20 + 3 +5), students may begin to generalize and frequently apply that strategy independently on future tasks. Further, students begin to look for strategies to be more efficient in computations, including doubles strategies and making a ten. Lastly, while solving all tasks, Second Grade students accurately check for the reasonableness of their solutions during and after completing the task. |

Return to Standards

***Represent and solve problems.***

**NC.2.OA.1** Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:

- One-Step problems:
  - Add to/Take from-Start Unknown
  - Compare-Bigger Unknown
  - Compare-Smaller Unknown
- Two-Step problems involving single digits:
  - Add to/Take from- Change Unknown
- Add to/Take From- Result Unknown

## Clarification

In this standard, students extend their previous work with addition and subtraction word problems in two ways. First, they represent and solve word problems within 100, building upon their previous work to 20 (NC.1.OA.1). Second, they represent and solve one and two-step word problems.

One-step word problems use one operation. Two-step word problems use two operations which may include the same operation or opposite operations.

| **One Step Word Problem** *One Operation* | **Two-Step Word Problem** *Two Operations, Same* | **Two-Step Word Problem** *Two Operations, Opposite* |
|---|---|---|
| There are 15 stickers on the page. Cindy put some more stickers on the page. There are now 22 stickers on the page. How many stickers did Cindy put on the page?<br><br>15 + ☐ = 22<br>22 – 15 = ☐ | 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?<br><br>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?<br><br>9 –5 + 7 = ☐ |

Second graders work with all addition and subtraction problem types, with unknowns in all positions. As students work with various problem types, they will record situation equations (equations in which the operation and order of numbers matches the situation of the problem). Eventually, students notice that a problem may be solved with other solution equations (equations that lead to the answer, but do not match the situation of the story).

Students continue working with problem types introduced in Kindergarten and First Grade, and are introduced to the four remaining problem types:

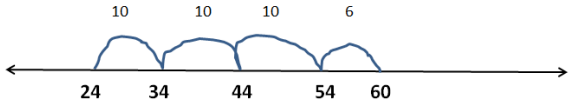
- *Add To/Start Unknown*
- *Take From/Start Unknown*
- *Compare/Bigger Unknown*
- *Compare/Smaller Unknown*

## Checking for Understanding

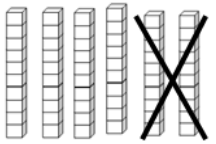
One-Step Example: Some students are in the cafeteria. 24 more students came in. Now there are 60 students in the cafeteria. How many were in the cafeteria to start with? Use drawings and equations to show your thinking.

Student A: *I read the equation and thought about how to write it with numbers. I asked, "What and 24 makes 60?" So, my equation is ☐ + 24 =60. I used a number line to solve it.*

*I started with 24. Then I took jumps of 10 until I got close to 60. I landed on 54. Then, I took a jump of 6 to get to 60. So, 10 + 10 + 10 + 6 = 36. So, there were 36 students in the cafeteria to start with.*

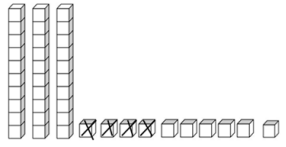



Student B: *I read the equation and thought about how to write it with numbers. First, I wrote an equation that showed me what the question is asking. I wrote ☐ + 24 = 60. Then, I thought, "There are 60 total. If I take away the part that I know (24), I'm left with the other part. So, what is 60 – 24?" My equation for the solution is 60 – 24 = ☐. I used place value blocks to solve it.*



*I started with 60 and took 2 tens away.*

*I needed to take 4 more away. So, I broke up a ten into ten ones. Then, I took 4 away.*



*That left me with 36. So, 36 students were in the cafeteria at the beginning. 60 – 24 = 36*

***Represent and solve problems.***

**NC.2.OA.1** Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:

- One-Step problems:
  - Add to/Take from-Start Unknown
  - Compare-Bigger Unknown
  - Compare-Smaller Unknown
- Two-Step problems involving single digits:
  - Add to/Take from- Change Unknown
- Add to/Take From- Result Unknown

## Clarification

Since Second Graders are just beginning their work with these four new problem types, they should **not** be included in two-step word problems. Additionally, two-step problems should involve single-digit addends so the primary focus is on understanding the problem situation and finding strategies to solve the problem.

As second grade students solve one- and two-step problems they use manipulatives such as snap cubes, place value materials, ten frames, etc.; create drawings of manipulatives to show their thinking; or use number lines to solve and describe their strategies. They then relate their drawings and materials to equations. Students solve a variety of addition and subtraction word problems, determining the unknown in all positions (*Result* unknown, *Change* unknown, and *Start* unknown). Rather than a letter ("*n*"), boxes or pictures are used to represent the unknown number.

| **Add To** | | |
|---|---|---|
| *Result* Unknown: There are 29 students on the playground. Then 18 more students showed up. *How many students are there now?* | *Change* Unknown: There are 29 students on the playground. *Some more students show up*. There are now 47 students. How many students came? | *Start* Unknown: *There are some students on the playground.* Then 18 more students came. There are now 47students. How many students were on the playground at the beginning? |
| 29 + 18 = ☐ K | 29 + ☼ = 47 1 | ☐ + 18 = 47 2 |

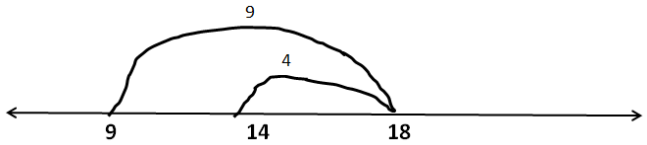
Second Graders use a range of methods, often mastering more complex strategies such as making tens and doubles and near doubles for problems involving addition and subtraction within 20. Moving beyond counting and counting-on, second grade students apply their understanding of place value to solve problems.

## Checking for Understanding

Two-Step Example: There are 9 students in the cafeteria. 9 more students come in. After a few minutes, some students leave. There are now 14 students in the cafeteria. How many students left the cafeteria? Use drawings and equations to show your thinking.

Student A

*I read the equation and thought about how to write it with numbers: 9 + 9 - ☐ = 14. I used a number line to solve it. I started at 9 and took a jump of 9. I landed on 18. Then, I jumped back 4 to get to 14. So, overall, I took 4 jumps. 4 students left the cafeteria.*




Student B

*I read the equation and thought about how to write it with numbers: 9 + 9 - ☐ = 14. I used doubles to solve it. I thought about double 9s. 9 + 9 is 18. I knew that I only needed 14. So, I took 4 away, since 4 and 4 is eight. So, 4 students left the cafeteria.*

***Represent and solve problems.***

**NC.2.OA.1** Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:

- One-Step problems:
  - Add to/Take from-Start Unknown
  - Compare-Bigger Unknown
  - Compare-Smaller Unknown
- Two-Step problems involving single digits:
  - Add to/Take from- Change Unknown
- Add to/Take From- Result Unknown

| | Result Unknown | Change Unknown | Start Unknown |
|---|---|---|---|
| **Add To** | Two birds sat in a tree. Three more birds fly to the tree. How many birds are in the tree now?<br>2 + 3 = ?<br>**K** | Two birds sat in the tree. Some more birds flew there. Then there were five birds in the tree. How many birds flew over to the first two?<br>2 + ? = 5<br>**1** | In the morning, some birds were sitting in a tree. At lunch time, three more birds flew there. Then there were five birds. How many birds were in the tree in the morning?<br>? + 3 = 5<br>**2** |
| **Take From** | Five birds were in a tree. Two birds flew away. How many birds are in the tree now?<br>5 - 2 = ?<br>**K** | Five birds were in a tree. Some flew away. Then there were three birds in the tree. How many birds flew away?<br>5 - ? = 3<br>**1** | In the morning, some birds were in a tree. At lunch time, two birds flew away. Then there were three birds left. How many birds were in the tree in the morning?<br>? - 2 = 3<br>**2** |

| | Total Unknown | Addend Unknown | Both Addends Unknown |
|---|---|---|---|
| **Put Together/ Take Apart** | Three red birds and two blue birds are in a tree. How many birds are in the tree?<br>3 + 2 = ?<br>**K** | Five birds are in a tree. Three are red and the rest are blue. How many birds are blue?<br>3 + ? = 5<br>5 - 3 = ?<br>**1** | Five birds are in a tree. They could either be blue birds or red birds. How many birds could be red and how could be blue?<br>5 = 0 + 5 5 = 5 + 0<br>5 = 1 + 4 5 = 4 + 1<br>5 = 2 + 3 5 = 3 + 2<br>**K** |

| | Difference Unknown | Bigger Unknown | Smaller Unknown |
|---|---|---|---|
| **Compare** | ***"How many more?" version:***<br>Lara has two stickers. Jade has five stickers. How many more stickers does Jade have than Lara?<br>***"How many less?" version:***<br>Lara has two stickers. Jade has five stickers. How many fewer stickers does Lara have than Jade?<br>2 + ? = 5<br>5 - 2 = ?<br>**1** | ***Version with "more":***<br>Jade has three more stickers than Lara. Lara has two stickers. How many stickers does Jade have?<br>***Version with "less":***<br>Lara has three fewer stickers than Jade. Lara has two stickers. How many stickers does Jade have?<br>2 + 3 = ?<br>3 + 2 = ?<br>**2** | ***Version with "more":***<br>Jade has three more stickers than Lara. Jade has five stickers. How many stickers does Lara have?<br>***Version with "fewer":***<br>Lara has three fewer stickers than Jade. Jade has five stickers. How many stickers does Lara have?<br>5 - 3 = ?<br>**2** |

Return to Standards

***Add and subtract within 20***

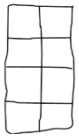
**NC.2.OA.2** Demonstrate fluency with addition and subtraction, within 20, using mental strategies.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students use various addition and subtraction strategies in order to fluently add and subtract within 20:<br><br>This standard calls for students to learn about and use a variety of strategies to solve addition and subtraction problems. As these strategies are repeatedly used in ways that make sense to the students, they begin to understand and internalize the relationships that exist between and among numbers. This leads to fluency. Students are fluent when they display *accuracy*, *efficiency*, and *flexibility*.<br><br>Traditional flash cards or timed tests have not been proven as effective instructional strategies for developing fluency. Rather, numerous experiences with breaking apart actual sets of objects and developing relationships between numbers help children internalize parts of number and develop efficient strategies for fact retrieval. | 9 + 5 = __<br><br>Counting On<br><br>*I started at 9 and counted 5 more. I landed on 14.*<br><br>Decomposing a Number-Leading to a Ten<br><br>*I know that 9 and 1 is 10, so I broke 5 into 1 and 4. 9 plus 1 is 10. Then I have to add 4 more, which is 14.*<br><br>13 - 9 = __<br><br>Using the Relationship between Addition and Subtraction<br><br>*I know that 9 plus 4 equals 13. So, 13 minus 9 is 4.*<br><br>Creating an Easier Problem<br><br>*Instead of 13 minus 9, I added 1 to each of the numbers to make the problem 14 minus 10. I know the answer is 4. So, 13 minus 9 is also 4.* |

***Work with equal groups***

**NC.2.OA.3** Determine whether a group of objects, within 20, has an odd or even number of members by:

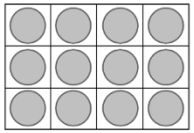
- Pairing objects, then counting them by 2s.
- Determining whether objects can be placed into two equal groups.
- Writing an equation to express an even number as a sum of two equal addends.

| **Clarification** | **Checking for Understanding** |
|---|---|
| The focus of this standard is placed on the conceptual understanding of even and odd numbers. An even number is an amount that can be made of two equal parts with no leftovers. An odd number is one that is not even and cannot be made of two equal parts.<br><br>When pairing objects, students may write equations to represent the pairs. For example, if given 6 objects, a students may write 2 + 2 + 2 = 6 to represent the pairs. However, the expectation for second graders is to apply the concept of doubles to the concept of odd and even numbers. Students should understand that if a number can be decomposed (broken apart) into two equal addends or doubles addition facts (e.g., 10 = 5 +5), then that number is an even number. Students should explore this concept with concrete objects (e.g., counters, cubes, etc.) before moving towards pictorial representations such as circles or arrays.<br><br>While noticing that even numbers end in 0, 2, 4, 6, and 8 is an interesting and useful observation, it should not be used as the definition of an even number. | Is 8 an even number? Justify your thinking.<br><br>*Possible responses:*<br><br>Student A<br>*I grabbed 8 counters. I paired counters up into groups of 2. Since I didn't have any counters left over, I know that 8 is an even number.*<br><br>Student B<br>*I grabbed 8 counters. I put them into 2 equal groups. There were 4 counters in each group, so 8 is an even number.*<br><br>Student C<br>*I drew 8 boxes in a rectangle that had two columns. Since every box on the left matches a box on the right, I know that 8 is even.*<br>  <br><br>Student D<br>*I know 4 plus 4 equals 8. So, 8 is an even number.* |

Return to Standards

***Work with equal groups***

**NC.2.OA.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.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students use rectangular arrays to work with repeated addition, a building block for multiplication in third grade. A rectangular array is any arrangement of things in rows and columns.<br><br>Students explore this concept with concrete objects (e.g., counters, bears, square tiles, etc.) as well as pictorial representations on grid paper or other drawings. Due to the commutative property of addition, students can add either the rows or the columns and still arrive at the same solution.<br><br>While students are not required to partition a rectangle into rows and columns, this standard is connected to that concept. Exploring a rectangle partitioned into rows and columns is a precursor to learning about area of a rectangle and using arrays for multiplication. | What is the total number of circles below?<br>  <br>*Possible responses:*<br>Student A<br>*I see 3 counters in each column and there are 4 columns. So, I added 3 + 3 + 3 + 3. That equals 12.*<br>3 + 3 + 3 + 3 = 12<br>Student B<br>*I see 4 counters in each row and there are 3 rows. So, I added 4 + 4 + 4. That equals 12.*<br>4 + 4 + 4 = 12<br><br>Joe used grid paper to make a rectangle with 2 rows and 4 columns. How many small squares did he make? Write an equation to show how you found the total amount of squares.<br><br>Student: *There are 8 squares in this rectangle. See- 2, 4, 6, 8. My equation is 2 + 2 + 2 + 2 = 8*<br>  |

Return to Standards

***Understand place value.***

**NC.2.NBT.1** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.

- Unitize by making a hundred from a collection of ten tens.
- Demonstrate that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds, with 0 tens and 0 ones.
- Compose and decompose numbers using various groupings of hundreds, tens, and ones.

## Clarification

In this standard, students extend their base-ten understanding to hundreds as they are introduced to the idea that a bundle of 10 tens is a unit called a "hundred". This is known as unitizing. Students group objects as they count using both groupable manipulatives (i.e., materials that can be grouped, snapped, or connected to make a ten or hundred) and pre-grouped manipulatives (i.e., materials like base ten blocks and bean sticks, which must be traded to make a ten or hundred). Object counting progresses through stages until students eventually use unitizing to make counting efficient. Stages include:

- **Counting by Ones:** Students group objects into hundreds, tens, and leftovers ones, but rely on counting all objects to find the quantity.
- **Counting by Groupings and Singles:** Students group objects into hundreds, tens, and leftover ones, and can identify the number of hundreds, tens, and ones. However, when asked the total amount, students still rely on counting by ones.
- **Counting by Hundreds, Tens, and Ones:** Students are able to group the quantity into hundreds, tens, and leftover ones. They use this information to determine how many.

Through use of manipulatives and pictorial representations, students make a connection between the written three-digit numbers and hundreds, tens, and ones. Understanding the value of the digits is more than telling the number of hundreds or tens. Second Graders who truly understand the position and place value of the digits are also able to confidently model the number with some type of visual representation. Others who seem like they know, because they can state which number is in the tens place, may not truly know what each digit represents. Second Graders also explore the idea that numbers (e.g., 100, 200, and 300) are groups of hundreds with zero tens and ones. Students represent these quantities with both groupable manipulatives and pre-grouped manipulatives.

Students continue to apply their place value understanding from first grade as they understand that 100 is the same amount at 10 groups of ten as well as 100 ones. This lays the groundwork for the structure of the base-ten system in future grades. This also leads to the understanding that numbers can be composed and decomposed in various ways (e.g., 100 may be represented with 9 tens and 10 ones).

## Checking for Understanding

Ms. Smith asked her students to use base ten blocks to represent the number 212.

- Molly used two hundreds, one ten, and two ones.
- Zack used 212 ones.

How can you show another way to represent 212 using base ten blocks?

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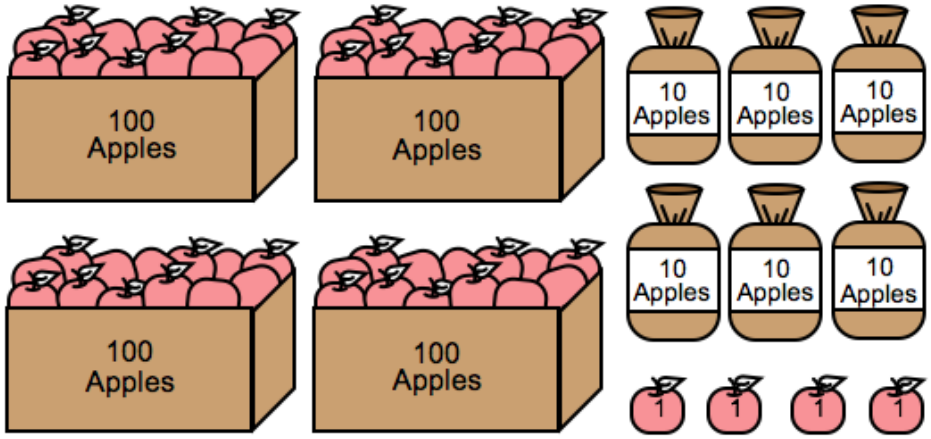
**Farmer Frank's Fruit Farm sells crates of 100 apples, bags of ten apples, and single apples. Farmer Frank drew this picture to show the number of apples he has for sale at the Fruit Farm today.**




a) How many apples are for sale at Farmer Frank's Fruit Farm today?
b) Write the number of apples using expanded form.

Return to Standards

***Understand place value.***
**NC.2.NBT.2** Count within 1,000; skip-count by 5s, 10s, and 100s.

| Clarification | Checking for Understanding |
|---|---|
| In this standard, students count within 1,000, including counting on from a given number without having to go back and start at one.<br><br>In Kindergarten, students skip counted by 10 up to 100. In second grade, students build on this work as they skip count by 5s, 10s, and 100s, laying groundwork for third grade's multiplication standards. Although skip counting is not yet true multiplication because students don't keep track of the number of groups they have counted, they can explain that when they count by 5s, 10s, and 100s they are counting groups of items with that amount in each group.<br><br>As Second Graders skip count, they notice patterns within the counting sequence. When skip counting by 5s using a 100s board or number line, students learn that the ones digit alternates between 5 and 0. When students skip count by 100s, they learn the hundreds digit is the only digit that changes and that it increases by one number. | Destiny was skip-counting the fruit roll ups by 5s. She already counted 490 fruit roll ups. As she continues to skip-count by 5s, what are the next six numbers she will count?<br><br>480, 485, 490, _____, _____, _____, _____, _____, _____<br><br>Cassandra was skip-counting the fruit roll ups by 10s. She already counted 178 fruit roll ups. As she skip-counts by 10s, what are the next six numbers she will count?<br><br>158, 168, 178, _____, _____, _____, _____, _____, _____ |

***Understand place value.***
**NC.2.NBT.3** Read and write numbers, within 1,000, using base-ten numerals, number names, and expanded form.

| Clarification | Checking for Understanding |
|---|---|
| This standard calls for students to read and write the numbers 1-999 in a variety of ways, including:<br>• Base ten numerals (e.g., 123)<br>• Number names (e.g., one hundred twenty-three)<br>• Expanded form (e.g., 100 + 20 + 3)<br><br>Expanded form is a foundational skill for when students use place value strategies to add and subtract large numbers (NC.2.NBT.7).<br><br>Students also explore the idea that numbers can be composed of different variations of ones, tens, and hundreds. For example, the representations for 100 include:<br>• 1 hundred<br>• 10 tens<br>• 9 tens + 10 ones<br>• 8 tens + 20 ones<br><br>When reading and writing whole numbers, the word "and" should not be used (e.g., 235 is stated and written as "two hundred thirty-five). | Write numbers in the blanks to make the equations true. Draw pictures if needed.<br><br>a) 283 = _____ hundreds + _____ tens + _____ ones<br><br>b) 283 = _____ tens + _____ ones<br><br>c) 283 = _____ ones<br><br>d) 8 ones + 5 hundreds = _____<br><br>e) _____ = 60 + 200 + 3<br><br>f) 9 tens + 12 ones = _____<br><br>g) _____ = 3 hundreds |

Return to Standards

***Understand place value.***

**NC.2.NBT.4** Compare two three-digit numbers based on the value of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

**Clarification**

This standard calls for students to apply their knowledge of NC.1.NBT.1 and NC.1.NBT.3 by examining the value of the digits within two three-digit numbers in order to compare them. When comparing numbers, students draw on the understanding that 1 hundred (the smallest three-digit number) is actually greater than any amount of tens and ones represented by a two-digit number. When students truly understand this concept, it makes sense that one would compare three-digit numbers by looking at the hundreds place first. Students are expected to be able to compare three-digit numbers presented in various forms.

Students should have ample experiences communicating their comparisons in words before using symbols. Students were introduced to the symbols greater than (>), less than (<) and equal to (=) in First Grade and continue to use them in Second Grade with numbers within 1,000.

While students may have the skills to compare and order several numbers, this standard focuses on comparing two numbers and using reasoning about place value to support the use of the various symbols.

**Checking for Understanding**

Compare these two numbers. 452 __ 455

| Student A<br>*Place Value* | Student B<br>*Counting* |
|---|---|
| *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.*<br><br>452 < 455 | *452 is less than 455. I know this because when I count up I say 452 before I say 455.452 is less than 455.*<br><br>452 < 455<br>. |

Use > or < to make each statement true. Draw pictures if needed.

| | |
|---|---|
| a) 700 + 5 + 60 ☐ 60 + 3 + 700 | b) 32 tens ☐ 254 |
| c) 40 + 600 + 8 ☐ 60+ 800 + 4 | d) 3 tens + 5 ones + 100 ☐ 147 |

Return to Standards

***Use place value understanding and properties of operations.***

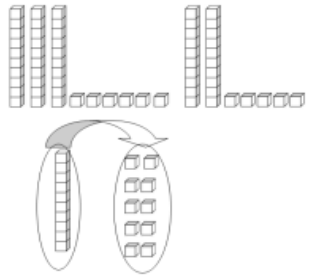
**NC.2.NBT.5** Demonstrate fluency with addition and subtraction, within 100, by:

- Flexibly using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Comparing addition and subtraction strategies, and explaining why they work.
- Selecting an appropriate strategy in order to efficiently compute sums and differences.

| **Clarification** | **Checking for Understanding** |
|---|---|
| When adding and subtracting within 100, students flexibly use strategies based on place value, properties of operations, and the relationship between addition and subtraction. Students are fluent when they display accuracy, efficiency, and flexibility. Students develop fluency by understanding and internalizing the relationships that exist between and among numbers. By studying patterns and number relationships, students can internalize strategies for efficiently solving problems.<br><br>Students explain why addition or subtraction strategies work as they apply their knowledge of place value and the properties of operations in their explanation. Students may use drawings or objects to support their explanation.<br><br>The standard algorithm of carrying or borrowing is neither an expectation nor a focus in Second Grade. Students develop strategies for addition and subtraction in Grades K-3. | 67 + 25 = __<br><br>*Place Value Strategy:*<br><br>*I broke both 67 and 25 into tens and ones. 6 tens plus 2 tens equals 8 tens. Then I added the ones. 7 ones plus 5 ones equal 12 ones. I then combined my tens and ones. 8 tens plus 12 ones equals 92.*<br><br>*Decomposing into Tens:*<br><br>*I decided to start with 67 and break 25 apart. I knew I needed 3 more to get to 70, so I broke off a 3 from the 25. I then added my 20 from the 22 left and got to 90. I had 2 left. 90 plus 2 is 92. So, 67 + 25 = 92*<br><br>*Commutative Property:*<br><br>*I broke 67 and 25 into tens and ones so I had to add 60+7+20+5. I added 60 and 20 first to get 80. Then I added 7 to get 87. Then I added 5 more. My answer is 92.*<br><br>63 – 32 = __<br><br>*Decomposing into Tens:*<br><br>*I broke apart both 63 and 32 into tens and ones. I know that 3 minus 2 is 1, so I have 1 left in the ones place. I know that 6 tens minus 3 tens is 3 tens, so I have a 3 in my tens place. My answer has a 1 in the ones place and 3 in the tens place, so my answer is 31. 63 – 32 = 31*<br><br>*Think Addition:*<br><br>*I thought, '32 and what makes 63?'. I know that I needed 30, since 30 and 30 is 60. So, that got me to 62. I needed one more to get to 63. So, 30 and 1 is 31. 32 + 31 = 63*<br><br>There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and explain your thinking.<br><br>Student A<br>*I broke 36 and 25 into tens and ones 30 + 6 + 20 + 5. I can change the order of my numbers, since it doesn't change any amounts, so I added 30+ 20 and got 50. Then I added 5 and 5 to make10 and added it to the 50. So, 50 and 10 more is 60. I added the one that was left over and got on 6 to get 61. So, there are 61 birds in the park.* |

Student B

*I used place value blocks and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61.*



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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 to 50. So, the answer is 22." Is their strategy correct? Explain why or why not?

Student: *I see what they did. Yes. I think the strategy is correct. They thought, '34 and what makes 56?' So, they thought about adding 2 to the 4 to get 6. Then, they had 36 and needed 56. So, they added 20 more. That means that they added 2 and 20 which is 22. I think that it's right.*

---

One of your classmates solved the problem 25 + 35 by adding 20 + 30 + 5 + 5. Is their strategy correct? Explain why or why not?

Student: *Well, 20 + 30 is 50. And 5 + 5 is 10. So, 50 + 10 is 60. I got 60 too, but I did it a different way. I added 25 and 25 to make 50. Then I added 5 more and got 55. Then, I added 5 more and got 60. We both have 60. I think that it doesn't matter if you add the 20 first or last. You still get the same amount.*

Return to Standards

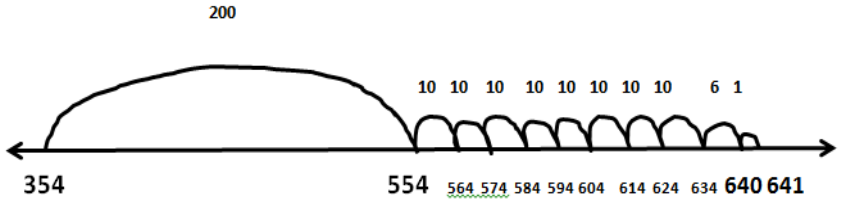
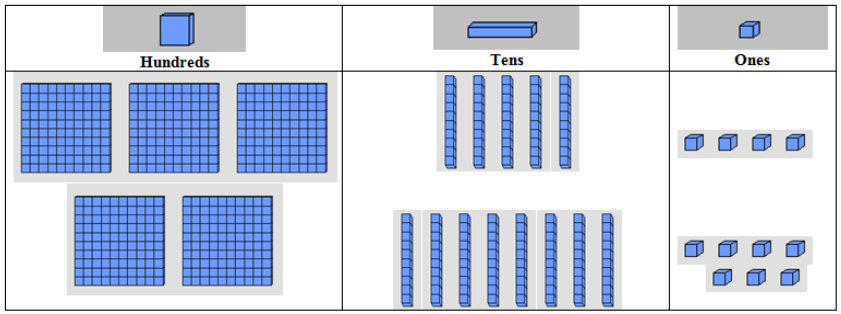
| ***Use place value understanding and properties of operations.***<br>**NC.2.NBT.6** Add up to three two-digit numbers using strategies based on place value and properties of operations. | |
|---|---|
| **Clarification** | **Checking for Understanding** |
| This standard builds upon NC.2.NBT.5 as students apply their understanding of place value and the properties of operations to add a string of up to three two-digit numbers. Students recognize that numbers may be grouped and added in any order (associative property), and combine numbers in ways that make adding easier.<br><br>Students explain why strategies work as they apply their knowledge of place value and the properties of operations in their explanation. Students may use drawings or objects to support their explanation.<br><br>The standard algorithm of carrying or borrowing is neither an expectation nor a focus in Second Grade. Students develop strategies for addition and subtraction in Grades K-3. | 43 + 34 + 57 = __<br><br>Student A<br>*Associative Property*<br><br>*I saw the 43 and 57 and added them first. I know 3 plus 7 equals 10, so when I added them 100 was my answer. Then I added 34 and had 134.*<br><br>*So, 43 + 57 + 34 = 134*<br><br>Student B<br>*Place Value Strategies*<br><br>*I broke up all of the numbers into tens and ones. First, I added the tens. 40 + 30 + 50 = 120. Then I added the ones. 3 + 4 + 7 = 14. That meant I had 1 ten and 4 ones. So, 120 + 10 is 130. 130 and 4 more is 134.*<br><br>*So, 43 + 34 + 57 = 134*<br><br>Student C<br>*Place Value Strategies and Associative Property*<br><br>*I broke up all the numbers into tens and ones. First, I added up the tens. 40 + 30 + 50. I changed the order of the numbers to make adding easier. I know that 40 + 50 equals 90. I took 10 from the 30, so that 90 + 10 equals 100. I added the 20 that was left to get 120.*<br><br>*Then I added up the ones. 3 + 4 + 7. I changed the order of the numbers to make adding easier. I know that 3 plus 7 equals 10. 10 plus 4 equals 14.*<br>*I then combined my tens and my ones. 120 plus 14 (1 ten and 4 ones) equals 134.* |

Return to Standards

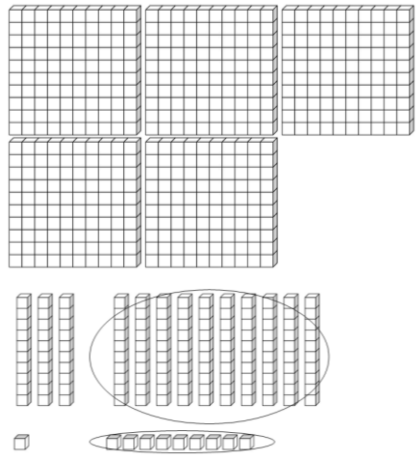
***Use place value understanding and properties of operations.***

**NC.2.NBT.7** Add and subtract, within 1,000, relating the strategy to a written method, using:

- Concrete models or drawings
- Strategies based on place value
- Properties of operations
- Relationship between addition and subtraction

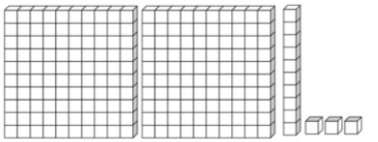
| **Clarification** | **Checking for Understanding** |
|---|---|
| This standard calls for students to extend their understanding of addition and subtraction to add and subtract two 3-digit numbers. They use concrete materials, models, drawings, place value strategies, and properties of operations to add within 1,000. Students are expected to explain their reasoning using pictures, numbers, or words.<br><br>The standard algorithm of carrying or borrowing is neither an expectation nor a focus in Second Grade. Students develop strategies for addition and subtraction in Grades K-3. | 354 + 287 = __<br><br>Student A<br>*I started at 354 and jumped 200. I landed on 554. I then made 8 jumps of 10 and landed on 634. I then jumped 6 to land on 640. Then I jumped 1 more and landed on 641. 354 + 287 = 641*<br><br>  <br><br><br>Student B<br>*I used place value blocks and a place value mat.*<br>*I broke up both of the numbers and placed them on the place value mat.*<br>*First, I added the ones.4 + 7 = 11.*<br>*Then I added the tens. 50 + 80 = 130.*<br>*Then I added the hundreds. 300 + 200 = 500.*<br>*Then I combined my answers. 500 + 130 = 630. 630 + 11= 641.*<br><br>  <br> |

Student C
*I used place value blocks. I made a pile of 354. I then added 287. That gave me 5 hundreds, 13 tens and 11 ones. I noticed that I could trade some pieces. I had 11 ones and traded 10 ones for a ten. I then had 14 tens, so I traded 10 tens for a hundred. I ended up with 6 hundreds, 4 tens and 1 one.*
*So, 354 + 287 = 641*

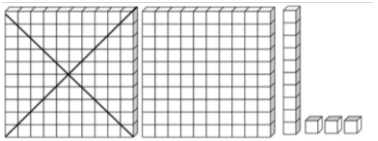


213 - 124 = __

Student: *I used place value blocks. I made a pile of 213.*

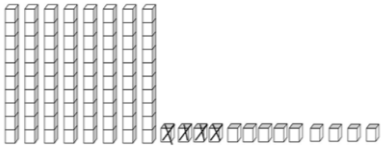


*I then started taking away blocks. First, I took away a hundred which left me with 1 hundred and thirteen.*

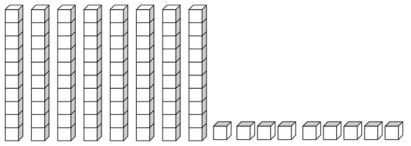


*Now, I only need to take away 24. I need to take away 2 tens but I only had 1 ten so I traded in my last hundred for 10 tens. Then I took two tens away leaving me with no hundreds and 9 tens and 3 ones.*

*I then had to take 4 ones away but I only have 3 ones. I traded in a ten for 10 ones. I then took away 4 ones.*



*This left me with no hundreds, 8 tens and 9 ones. My answer is 89. 213 - 124 = 89*



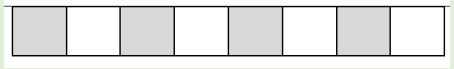
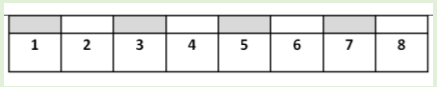
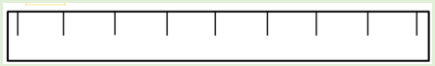
Return to Standards

| ***Use place value understanding and properties of operations.***<br>**NC.2.NBT.8** Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. | |
|---|---|
| **Clarification** | **Checking for Understanding** |
| In this standard, students build on the work from NC.1.NBT.5 where they mentally found 10 more and 10 less than any two-digit number. Standard NC.2.NBT.8 builds on this work as students mentally add and subtract 10 or 100 from a given number between 100 and 900.<br><br>As students engage in various experiences with concrete objects and representations, they realize that when one adds or subtracts 10 or 100 that only the tens place or the digit in the hundreds place changes by 1. Students discover patterns and connect the digit change with the amount changed, which leads into solving problems mentally.<br><br>Opportunities to solve problems in which students cross hundreds are also provided once students have become comfortable adding and subtracting within the same hundred. | Within the same hundred:<br>What is 10 more than 218?<br>What is 241 – 10?<br><br>Across hundreds:<br>293 + 10 = ☐<br>What is 10 less than 206? |

Return to Standards

***Measure and estimate lengths***

**NC.2.MD.1** Measure the length of an object in standard units by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students build upon their non-standard measurement experiences in first grade by measuring in standard units. Students will apply their understanding of iteration to determine the length of an object using standard units.<br><br>Using both customary (inches and feet) and metric (centimeters and meters) units, students select an attribute to be measured (e.g., length of classroom), choose an appropriate unit of measurement (e.g., yardstick), and determine the number of units (e.g., yards). Students will understand that larger units (e.g., yard) can be partitioned into equivalent units (e.g., feet or inches).<br><br>Students should connect their understanding of non-standard units from first grade to standard units in second grade.<br><br>By helping students progress from a "ruler" that is blocked off into colored units (no numbers)…<br>  <br><br>…to a "ruler" that has numbers along with the colored units…<br>  <br><br><br>…to a "ruler" that has inches (centimeters) with and without numbers, students develop the understanding that the numbers on a ruler do not count the individual marks but indicate the spaces (distance) between the marks. This is a critical understanding students need when using such tools as rulers, yardsticks, meter sticks, and measuring tapes.<br>  <br>  <br> | Use a ruler to measure the width of the doorway in inches and in centimeters. Explain how you found how wide the doorway was.<br><br>Would it more appropriate to use a ruler or a yard stick to measure the length of a book? Explain why. |

Return to Standards

| ***Measure and estimate lengths***<br>**NC.2.MD.2** Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. | |
|---|---|
| **Clarification** | **Checking for Understanding** |
| In this standard, students measure an object using two units of different lengths. Students will understand the relationship between the size of a unit and the number of units needed (compensatory principal). Students should understand that the smaller the unit, the more units it will take to measure the selected attribute. | Measure the height of the table with a yard stick. How tall is the table in feet? How tall is the table in inches? Explain how the measurements can both be used to describe the height of the table.<br><br>*Possible response:*<br>*The table is a little bit more than 2 feet tall. When I measured it in inches, it was 26 inches. Both 2 feet and 26 inches can be used to describe the height since the units feet and inches are different. The measurement has more inches than feet since inches are a smaller unit than feet.* |

| ***Measure and estimate lengths***<br>**NC.2.MD.3** Estimate lengths in using standard units of inches, feet, yards, centimeters, and meters. | |
|---|---|
| **Clarification** | **Checking for Understanding** |
| In this standard, students estimate the lengths of objects using inches, feet, centimeters, and meters prior to measuring. Estimation helps the students focus on the attribute being measured and the measuring process. As students estimate, the student considers the size of the unit-helping them to become more familiar with the unit size. Once a student has made an estimate, the student measures the object and reflects on the accuracy of the estimate made and considers this information for the next measurement. | How many inches do you think this string is if you measured it with a ruler?<br><br>*Possible response:*<br>*An inch is pretty small. I'm thinking it will be somewhere between 8 and 9 inches. If I measure it with a ruler, it is 9 inches. I thought that it would be somewhere around there.* |

| ***Measure and estimate lengths***<br>**NC.2.MD.4** Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. | |
|---|---|
| **Clarification** | **Checking for Understanding** |
| In this standard, students choose two objects to measure, identify an appropriate tool and unit, measure both objects, and then determine the differences in lengths. Students should make comparative statements to describe difference between two objects such as "This object is shorter by 2 inches" or "It is longer by 4 centimeters." | Choose two pieces of string to measure. How many inches do you think each string is?<br>*I think String A is about 8 inches long. I think string B is only about 4 inches long. It's really short.*<br><br>Measure to see how long each string is. What did you notice?<br>*String A is definitely the longest one. It is 10 inches long. String B was only 5 inches long. I was close!*<br><br>How many more inches does your short string need to be so that it is the same length as your long string?<br>*String B is 5 inches. It would need 5 more inches to be 10 inches. 5 and 5 is 10.* |

Return to Standards

***Relate addition and subtraction to length.***

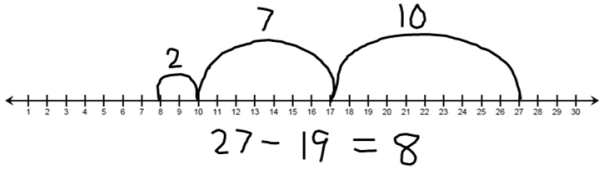
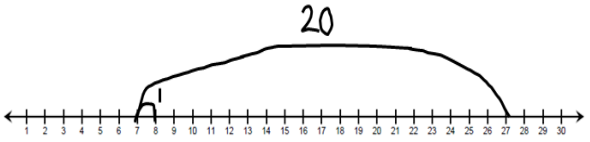
**NC.2.MD.5** Use addition and subtraction, within 100, to solve word problems involving lengths that are given in the same units, using equations with a symbol for the unknown number to represent the problem.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students apply their understanding of length to solve addition and subtraction word problems with numbers within 100. Within a problem, the same unit of measurement should be used. Equations may vary depending on students' interpretation of the task.<br><br>Students are expected to solve word problems related to all of the problem types for addition and subtraction. | In P.E. class Kate jumped 14 inches. Mary jumped 23 inches. How much farther did Mary jump than Kate? Write an equation and then solve the problem.<br><br>*Possible responses:*<br>Student A<br>*My equation is 14 + __ = 23 since I thought, "14 and what makes 23?". I used cubes. I made a train of 14. Then I made a train of 23. When I put them side by side, I saw that Kate would need 9 more cubes to be the same as Mary. So, Mary jumped 9 more inches than Kate. 14 + 9 = 23.*<br>  <br>Student B<br>*My equation is 23 - 14 = __ since I thought about what the difference was between Kate and Mary. I broke up 14 into 10 and 4. I know that 23 minus 10 is 13. Then, I broke up the 4 into 3 and 1. 13 minus 3 is 10. Then, I took one more away. That left me with 9. So, Mary jumped 9 more inches than Kate. That seems to make sense since 23 is almost 10 more than 14. 23 – 14 = 9.*<br>23 – 10 = 13<br>13 – 3 = 10<br>10 – 1 = 9 |

Return to Standards

***Relate addition and subtraction to length.***

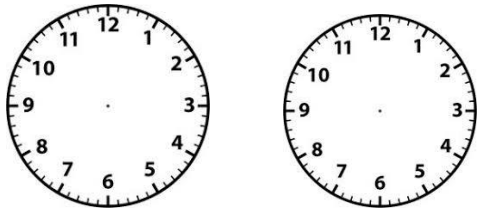
**NC.2.MD.6** Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points and represent whole-number sums and differences, within 100, on a number line.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students build upon their experiences with open number lines. Students create number lines with evenly spaced points corresponding to the numbers to solve addition and subtraction problems to 100. Students should recognize the similarities between a number line and a ruler. | There were 27 students on the bus. 19 got off the bus. How many students are on the bus?<br><br>Possible responses:<br>*Student A: I used a number line. I started at 27. I broke up 19 into 10 and 9. That way, I could take a jump of 10. I landed on 17. Then I broke the 9 up into 7 and 2. I took a jump of 7. That got me to 10. Then I took a jump of 2. That's 8. So, there are 8 students now on the bus.*<br>  <br><br>*Student B: I used a number line. I saw that 19 is really close to 20. Since 20 is a lot easier to work with, I took a jump of 20. But, that was one too many. So, I took a jump of 1 to make up for the extra. I landed on 8. So, there are 8 students on the bus.*<br>*27 - 20 = 7*<br>*7 + 1 = 8*<br>  <br> |

Return to Standards

***Build understanding of time and money.***

**NC.2.MD.7** Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

| Clarification | Checking for Understanding |
|---|---|
| In this standard, students extend their work with telling time to tell the time indicated on both analog and digital clocks to the nearest five minutes. Students make connections between skip counting by 5s (NC.2.NBT.2) and telling time to the nearest five minutes on an analog clock.<br><br>Students should be familiar with terminology for telling time, such as 2 o'clock, and they should be able write time with colon notation, such as 1:55. Students should also indicate if the time is in the morning (a.m.) or in the afternoon/evening (p.m.) as they record the time.<br><br>Students should understand that the hour hand indicates broad, approximate time while the minute hand indicates the minutes in between each hour. For example, the hour hand will gradually move between the 2 and the 3 as the time moves from 2:00 to 2:59. | On the clocks below draw the hands on the clock for 2:05 and 2:40.<br>  <br>Write the times shown on the 3 clocks below:<br>  |

***Build understanding of time and money.***

**NC.2.MD.8** Solve word problems involving:

- Quarters, dimes, nickels, and pennies within 99¢, using ¢ symbols appropriately.
- Whole dollar amounts, using the $ symbol appropriately.

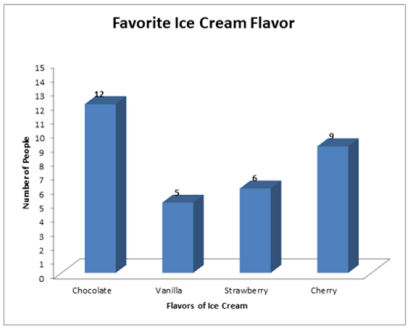
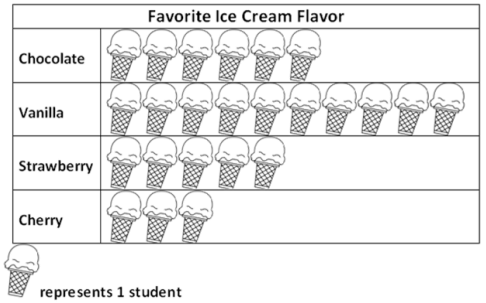
| Clarification | Checking for Understanding |
|---|---|
| In this standard, students solve word problems involving either dollars or cents. Students were introduced to coins in first grade and should be able to apply their knowledge of coin identification and coin values to solving problems. Just as students learn that a number (38) can be represented different ways (3 tens and 8 ones; 2 tens and 18 ones) and still remain the same amount (38), students should apply this understanding to money. For example, 25 cents can look like a quarter, two dimes and a nickel, and it can look like 25 pennies, and still all remain 25 cents.<br><br>Students can use the value of 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. Since students have not been introduced to decimals, problems focus on whole dollar amounts or cents. | How many different ways can you make 37¢ using pennies, nickels, dimes, and quarters?<br><br>How many different ways can you make 12 dollars using $1, $5, and $10 bills? |

Return to Standards

***Represent and interpret data.***

**NC.2.MD.10** Organize, represent, and interpret data with up to four categories.

- Draw a picture graph and a bar graph with a single-unit scale to represent a data set.
- Solve simple put-together, take-apart, and compare problems using information presented in a picture and a bar graph.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students pose a question, determine up to 4 categories of possible responses, collect data, represent data on a picture graph or bar graph, and interpret the results. Students are able to use a graph to note particular aspects of the data collected, including the total number of responses, which category had the most/least responses, and differences/ similarities between the four categories. Students solve simple one-step problems using the information from the graph. | Pose a question to collect survey data and create a table and a graph to match the data.<br><br>*Possible response:*<br>*The Second Graders decided to collect data to determine which ice cream flavors to buy for an event. As a group, the students decided on the question, "What is your favorite flavor of ice cream?" and 4 likely responses, "chocolate", "vanilla", "strawberry", and "cherry".*<br><br>*The students then divided into teams and collected data from different classes in the school. Each team decided how to keep track of the data, then organized their data by totaling each category in a chart or table.*<br><br>**Flavor** / **Number of People**<br>Vanilla 10<br>Strawberry 5<br>Cherry 3<br>Chocolate 6<br><br>*Once the data were represented on a graph, the teams then analyzed and recorded observations made from the data. Statements such as, "Vanilla had the most votes" and "Vanilla had more votes than strawberry and cherry votes combined."*<br><br>  <br>  |

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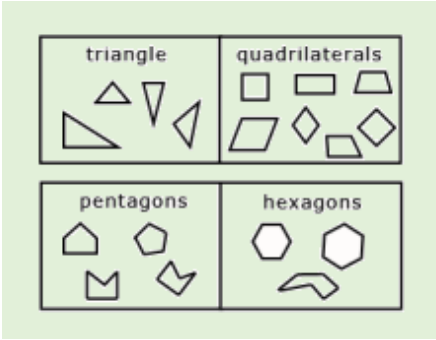
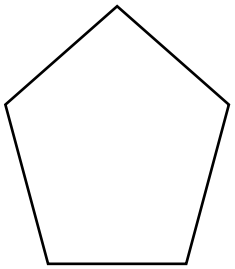
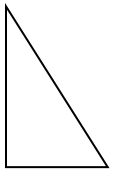
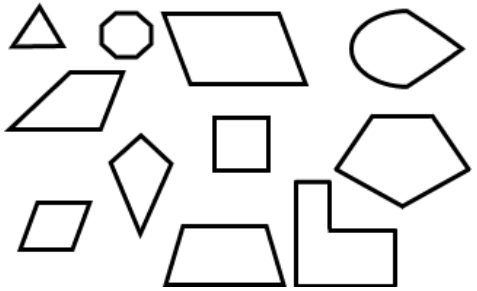
***Reason with shapes and their attributes.***
**NC.2.G.1** Recognize and draw triangles, quadrilaterals, pentagons, and hexagons, having specified attributes; recognize and describe attributes of rectangular prisms and cubes.

| **Clarification** | **Checking for Understanding** |
|---|---|
| In this standard, students identify, describe, and draw shapes based on a given set of defining attributes. Students should use the word angle in place of corner, but do not need to name angle types. Triangles, pentagons, and hexagons should appear as both regular and irregular, and students should recognize all four-sided shapes as quadrilaterals.<br>  <br>Students should identify two-dimensional shapes used to construct rectangular prisms and cubes and should also be able to identify and describe attributes of rectangular prisms and cubes. Students are not expected to draw three-dimensional objects.<br><br>**Note:** North Carolina has adopted the exclusive definition for a trapezoid. **A trapezoid is a quadrilateral with *exactly* one pair of parallel sides**. | Draw a closed shape that has five sides. What is the name of the shape?<br>  <br>*I drew a shape with 5 sides.*<br>*It is called a pentagon.*<br><br>I am a shape that has 3 sides and 3 angles. What am I?<br>  <br>*A triangle.*<br>*See, 3 sides, 3 angles.*<br><br>Circle all of quadrilaterals among these geometric figures.<br>  |

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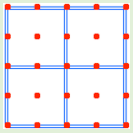
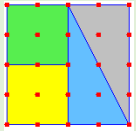
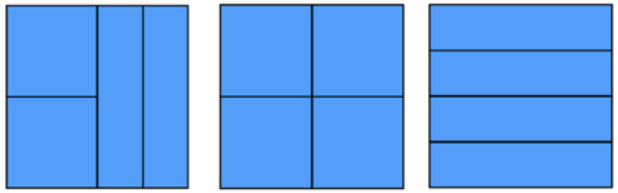
***Reason with shapes and their attributes.***

**NC.2.G.3** Partition circles and rectangles into two, three, or four equal shares.

- Describe the shares using the words halves, thirds, half of, a third of, fourths, fourth of, quarter of.
- Describe the whole as two halves, three thirds, four fourths.
- Explain that equal shares of identical wholes need not have the same shape

| Clarification | Checking for Understanding |
|---|---|
| In this standard, students will be able to partition rectangles and circles of various sizes into two, three, or four equal shares. Through experiences with multiple representations, students should use the words, *halves, thirds* and *fourths,* and the phrases *half of, third of* and *fourth of (or quarter of)* to describe their thinking and solutions. Working with the "the whole", students understand that "the whole" is composed of two halves, three thirds, or four fourths.<br><br>Students should recognize that when a circle is cut into three equal pieces, each piece will equal one-third of its original whole. Students should describe the whole as three thirds. If a circle is cut into four equal pieces, each piece will equal one-fourth of its original whole and the whole is described as four fourths.  <br><br>This standard also addresses the idea that equal shares of identical wholes may not have the same shape. Students should understand that fractional parts may not be symmetrical. The only criteria for equivalent fractions is that the area is equal. Students should partition circles and rectangles in multiple ways, so they learn to recognize that equal shares can be different shapes within the same whole.<br><br>**For example:**<br><br>  When partitioning this geoboard into fourths, the student divided the square into four equal sized squares to show that each piece is a fourth.<br><br>  When partitioning this geoboard into fourths, the student partitioned the geoboard in half down the middle. Then, he divided the section on the left into two equal sized squares, and the section on the right into two equal sized triangles. The student explains that each section of the geoboard is half of a half, which is the same as a fourth. | Partition each rectangle into fourths a different way. Explain how you know that each part is a fourth.<br><br>*Possible response:*<br><br>  <br><br>*I partitioned this rectangle 3 different ways. I folded or cut the paper to make sure that all of the parts were the same size. There are four equal parts. So, each part is one-fourth of the whole rectangle.* |

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