MOBILE COUNTY PUBLIC SCHOOLS
DIVISION OF CURRICULUM & INSTRUCTION
FIRST GRADE MATHEMATICS INSTRUCTIONAL PLANNING GUIDE
2017-2018: QTR1

Qtr. 1: Weeks 1-3
August 8 – August 25 (14 days)
Grade 1, Unit 1

UNIT OVERVIEW: EXTEND THE COUNTING SEQUENCE

This standard calls for students to rote count forward to 120 by Counting On from any number less than 120. (However, in this unit students will only count to 40). Students should have ample experiences with the hundreds chart to see patterns between numbers, such as all of the numbers in a column on the hundreds chart have the same digit in the ones place, and all of the numbers in a row have the same digit in the tens place.

This standard also 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 cubes, place value (base 10) blocks, pictorial representations or other concrete materials. As students are developing accurate counting strategies they are also building an understanding of how the numbers in the counting sequence are related—each number is one more (or one less) than the number before (or after).

Essential Questions	**Key Vocabulary:**
How do we know where a number lies on a number line? How can we use counting to compare objects in a set? What happens when we join two quantities or take one from another? How can we find the total when we join two quantities?	• counting on • equal to • less than • more than • number line • number patterns • number relationships • same • counting all • numerals • addition • number bond • sum • putting together • adding to

Standards/Objectives

Mastery Standards	**Standards Clarification**
[1-NBT.1] 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. • First graders develop accurate counting strategies that build on the understanding of how the numbers in the counting sequence are related—each number is one more (or one less) than the number before (or after). In addition, first grade students read and write numerals to represent a given amount.	**[1-NBT.1]** Count to **40**, starting at any number less than 40.

[1-OA.5] Relate counting to addition & subtraction (counting on 2 to add 2). • Example: **7 + 2 =** ☐ • **Counting All**: Students count all objects to determine the total amount. Example: The student counts out seven counters. The student adds two more counters. The student then counts all of the counters starting at 1 (1, 2, 3, 4, 5, 6, 7, 8, 9) to find the total amount. • **Counting On**: Students hold a "start number" in their head and count on from that number. Example: Holding 7 in her head, the student holds up one finger and says 8, then holds up another finger and says 9. The student knows that 7 + 2 is 9, since she counted on 2 using her fingers.	**[1-OA.5]** Counting on up **to 10.**
Opportunity for Depth Standards	**Standard Clarification**
[1-OA.6] Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as **counting on**; • **making ten** (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); • **decomposing a number leading to a ten** (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); • **using the relationship between addition and subtraction** (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); • and **creating equivalent but easier or known sums** (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)	**[1-OA.6]** Add and subtract **within 10.** Instructional focus on **make 10**, **plus 3** & **plus 4. BUILDING FLUENCY** ***Basic Fact Assessment: Addition facts to 5***

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<table>
<tr><th colspan="4">Resources Quarter 1 Unit 1
Some tasks (1NBT.1) may need to be modified to keep children within the 1-40 range for 1st Quarter.</th></tr>
<tr>
<td>Illustrative Math – (NBT1)
https://www.illustrativemathematics.org/1
Counting activities may need to be modified to keep numbers within 1-40.

• Counting Circles II
• Choral Counting II
• “Crossing the Decade” Concentration
• Hundred Chart Digit Game
• Number of the Day
• Start/Stop Counting II
• Where Do I Go?

Precursor lessons to Engage NY and/or Georgia 1.OA.5 lessons.</td>
<td>Georgia Standards Unit 3 – (OA5)
https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

Unit 2 – (NBT1)
https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-2.pdf
• One Minute Challenge
• Mystery Number
• Close, Far and In-Between

You may need to modify lessons to keep numbers within 1-40.</td>
<td>Engage NY Module 1 Topics: A, B, D, & G – (OA5)
https://www.engageny.org/resource/grade-1-mathematics-module-1</td>
<td>Math in Focus
Chapter 1, Lesson 1 - (NBT1)
Counting to 10
Chapter 2, Lesson 1 - (OA5)
Number Bonds
Chapter 3, Lesson 3 - (OA5)
Addition within 10
Chapter 7, Lesson 4 - (NBT1)
Counting patterns (to 20) and number sense
Chapter 12, Lesson 3 - (NBT1)
Counting patterns (to 40) and number sense</td>
</tr>
<tr><td colspan="4">Xtra Math https://xtramath.org/#/home/index Free, individualized web based program that helps to build student fluency (1.OA.6)</td></tr>
<tr><th colspan="4">Focus Standards for Mathematical Practice</th></tr>
<tr><td colspan="4">MP.7 Look for and make use of structure.</td></tr>
<tr><td colspan="4">MP.8 Look for and express regularity in repeated reasoning.</td></tr>
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Qtr. 1: Weeks 4-6
August 28 - September 15 (14 days)
Grade 1, Unit 2

UNIT OVERVIEW: DEVELOPING ADDITION AND SUBTRACTION STRATEGIES

This standard builds on the work in Kindergarten by having students use a variety of mathematical representations (e.g., objects, drawings, and equations) during their work. The unknown symbols should include boxes or pictures.

Teachers should be cognizant of the three types of addition and subtraction problems: Result Unknown, Change Unknown, and Start Unknown. Use informal language (and, minus/subtract, the same as) to describe joining situations (putting together) and separating situations (breaking apart). Use the addition symbol (+) to represent joining situations, the subtraction symbol (-) to represent separating situations, and the equal sign (=) to represent a relationship regarding quantity between one side of the equation and the other. A helpful strategy is for students to recognize sets of objects in common patterned arrangements (0-6) to tell how many without counting (subitizing).

Essential Questions:	**Key Vocabulary:** • add • adding to • taking from • putting together • taking apart • comparing • unknown • sum • less than • equal to • minus • subtract • the same amount as • and (to describe (+) symbol) • counting on • making ten • doubles • equation • counting back • counting all
How can we represent a set of objects using numerals? How can we find what is left when we take one quantity from another? How can we represent problem situations? What happens when we change the order of numbers when we add (or subtract)? Why?	

Standards/Objectives

Mastery Standards	**Standards Clarification**
[1-OA.5] Relate counting to addition and subtraction (counting on 2 to add 2). • Example: **9 - 3 =** ☐ • **Counting All** The student counts out nine counters. The student then removes 3 of them. To determine the final amount, the student counts each one (1, 2, 3, 4, 5, 6) to find out the final amount. • **Counting Back** Keeping 9 in his head, the student counts backwards, "8" as he holds up one finger; says "7" as he holds up a second finger; says "6" as he holds up a third finger. Seeing that he has counted back 3 since he is holding up 3 fingers, the student states that 9 – 3 = 6.	**[1-OA.5]** Include subtraction component of the standard. Subtraction **within 10.**

<table>
<tr>
<td>[1-OA.4] Understand subtraction as an unknown-addend problem.

• For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.
• For Sums to 10
Think-Addition uses known addition facts to solve for the unknown part or quantity within a problem. When students use this strategy, they think, “What goes with this part to make the total?” The think-addition strategy is particularly helpful for subtraction facts with sums of 10 or less.
• For example, when working with the problem 9 - 5 = [ ]
and what makes nine?”, rather than relying on a counting approach in which the student counts 9, counts off 5, and then counts what’s left. When subtraction is presented in a way that encourages students to think using addition, they use known addition facts to solve a problem.
• Example: 10 – 2 = ☐
Student: “2 and what make 10? I know that 8 and 2 make 10. So, 10 – 2 = 8.”</td>
<td>[1-OA.4] Add and subtract within 10.</td>
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<tr>
<td>Opportunity for Depth Standards</td>
<td>Standards Clarification</td>
</tr>
<tr>
<td>[1-OA.1] Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</td>
<td>[1-OA.1] (Easy Type) within 10.

<u>Add To Result Unknown</u>
Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now?
2 + 3 = ☐

<u>Take From Result Unknown</u>
Five apples were on the table. I ate two apples. How many apples are on the table now?
5 – 2 = ☐

<u>Put Together/Take Apart Total Unknown</u>
Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ☐</td>
</tr>
</table>

[1-OA.6] Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as **counting on**; • **making ten** (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); • **decomposing a number leading to a ten** (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); • **using the relationship between addition and subtraction** (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); • and **creating equivalent but easier or known sums** (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)	**[1-OA.6]** Add and subtract **within 10.** Instructional focus on **make 10**, **plus 3** & **plus 4. BUILDING FLUENCY** ***Basic Fact Assessment: Addition facts to 5***

Resources Quarter 1 Unit 2			
Georgia Standards Unit 3 – (OA1, OA4, OA5, OA6) **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf**	**Engage NY Module 1 Topics: C, F, H (Lessons 28, 29 & 30), & I (Lessons 33 & 34) – (OA1, OA4, OA5, OA6)** **https://www.engageny.org/resource/grade-1-mathematics-module-1**	**K-5 Math Resources – (OA1, OA4, OA5, OA6)** **http://www.k-5mathteachingresources.com/1st-grade-number-activities.html**	**Math in Focus** **Chapter 3, Lessons 2 & 3 - (OA1)** ***Story Problems (Addition)*** **Chapter 4, Lesson 1 - (OA5)** ***Subtraction*** **Chapter 4, Lessons 2 & 3 - (OA1)** ***Story Problems (Subtraction)*** **Chapter 4, Lesson 4 - (OA6)** ***Fact Families***
Xtra Math **https://xtramath.org/#/home/index** *Free, individualized web based program that helps to build student fluency* (1.OA.6)			

Focus Standards for Mathematical Practice
MP.1 Make sense of problems and persevere in solving them.
MP.3 Construct viable arguments and critique the reasoning of others.
MP.4 Model with mathematics.
MP.7 Look for and make use of structure.

Qtr. 1: Weeks 7-9
September 18 - October 6 (15 Days)
Grade 1, Unit 3

UNIT OVERVIEW: UNDERSTANDING PLACE VALUE

Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones **(especially recognizing the numbers 11 to 19 as composed of a ten and some ones).** Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

Essential Questions	**Key Vocabulary**
How can we use different combinations of numbers and operations to represent the same quantity? What happens when we change the order of numbers when we add (or subtract)? Why? How do we represent a collection of objects using tens and ones? How does using 10 as a benchmark help us compose numbers?	• benchmark • compare • place value • tens • ones • equal to • compose • commutative property • greater than • less than • same as • add • subtract • bundle • left-overs

Standards/Objectives

Mastery Standards	**Standards Clarification**
[1-OA.3] Apply properties of operations as strategies to add and subtract. • If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. **(Commutative property of addition.)** • To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. **(Associative property of addition)** • **Example: Cubes** A student uses 2 colors of cubes to make as many different combinations of 8 as possible. When recording the combinations, the student records that 3 green cubes and 5 blue cubes equals 8 cubes in all. In addition, the student notices that 5 green cubes and 3 blue cubes also equals 8 cubes. • **Example: Number Balance** A student uses a number balance to investigate the commutative property. "If 8 and 2 equals 10, then I think that if I put a weight on 2 first this time and then on 8, it'll also be 10."	**[1-OA.3]** Commutative Property

[1-OA.7] Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. • For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2. • In order to determine whether an equation is true or false, First Grade students must first understand the meaning of the equal sign. This is developed as students solve numerous joining and separating situations with mathematical tools, rather than symbols. Once the concepts of joining, separating, and "the same amount/quantity as" are developed concretely, students learn that the equal sign does not mean "the answer comes next", but that the symbol signifies an equivalent relationship that the left side 'has the same value as' the right side of the equation.	**[1-OA.7]** Understand the equal sign means "is the same as" 6 = 6 , 7 = 8 – 1
[1-NBT.3] Compare two 2-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, & <	**[1-NBT.3]** Compare with **models only.**

Opportunity for Depth Standards	Standards Clarification
[1-NBT.2] Understand that the **two digits of a two-digit number represent amounts of tens and ones**. Understand the following as special cases: **a. 10 can be thought of as a bundle of ten ones** — called a "**ten**." • First Grade students are introduced to the idea that a bundle of ten ones is called "a ten". **This is known as unitizing.** When First Grade students unitize a group of ten ones as a whole unit ("a ten"), they are able to count groups as though they were individual objects. For example, 4 trains of ten cubes each have a value of 10 and would be counted as 40 rather than as 4. This is a monumental shift in thinking, and can often be challenging for young children to consider a group of something as "one" when all previous experiences have been counting single objects. This is the foundation of the place value system and requires time and rich experiences with concrete manipulatives to develop. **b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.** • Students in first grade explore the idea that **the teen numbers (11 to 19) can be expressed as *one* ten and some leftover ones.** Ample experiences with a variety of groupable materials that are proportional (e.g., cubes, links, beans, beads) and ten frames help students develop this concept.	**[1-NBT.2]** Place Value for numerals 11-20.
[1-OA.6] Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as **counting on**; • **making ten** (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); • **decomposing a number leading to a ten** (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); • **using the relationship between addition and subtraction** (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); • and **creating equivalent but easier or known sums** (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)	**[1-OA.6]** Add and subtract **within 10.** Instructional focus on **make 10**, **plus 3** & **plus 4. BUILDING FLUENCY** ***Basic Fact Assessment: Addition facts to 5***

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Resources for Quarter 1 Unit 3 ***Activities may need to be modified to numbers 1-20***			
Engage NY Module 1 Topic E – (OA3, OA7) **https://www.engageny.org/resource/grade-1-mathematics-module-1** **Module 2 Topics A, C, D – (NBT2, OA3, OA7)** **https://www.engageny.org/resource/grade-1-mathematics-module-2** **Module 4 Topic B (Lessons 7, 9 &10) - (NBT3, OA7)** **https://www.engageny.org/resource/grade-1-mathematics-module-4**	**Georgia Standards Unit 3 – (OA3, OA7)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf** **Unit 5 – (NBT2, NBT3)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.pdf**	**Supplemental Resource** **North Carolina Wiki Spaces – (NBT2, NBT3, OA3)** **http://maccss.ncdpi.wikispaces.net/file/view/CCSSMathTasks-Grade1.pdf/593328526/CCSSMathTasks-Grade1.pdf** **• Number Bingo** **• Place Value and Arrow Cards** **• Greater Than, Less Than, Equal To** **• Spin to Win** **• What's the Missing Number?** **• Handful of Cubes**	**Math in Focus** **Chapter 7, Lessons 1-3 (NBT2b)** ***Place Value***
Xtra Math **https://xtramath.org/#/home/index** *Free, individualized web based program that helps to build student fluency* (1.OA.6)			
Focus Standards for Mathematical Practice			
MP.2 Reason abstractly and quantitatively.			
MP.3 Construct viable arguments and critique the reasoning of others.			
MP.7 Look for and make use of structure.			