MOBILE COUNTY PUBLIC SCHOOLS
DIVISION OF CURRICULUM & INSTRUCTION
FIRST GRADE MATHEMATICS INSTRUCTIONAL PLANNING GUIDE
2017-2018: QTR 3

Qtr. 3: Weeks 1-3
January 4 – January 26 (16 days)
Grade 1, Unit 7

UNIT OVERVIEW: DEVELOPING ADDITION AND SUBTRACTION STRATEGIES

Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., ―making tens) to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

Essential Questions	**Key Vocabulary** • addition • subtraction • associative property • commutative property • computation strategy • counting on • number line • strategies for addition • unknown addend • make ten • sum • doubles • minus • put together • benchmark • take apart
What happens when we change the order of numbers when we add (or subtract)? Why? How can we show that addition and subtraction are related through fact families? How can we use different combinations of numbers and operations to represent the same quantity?	

Standards/Objectives

Mastery Standards	**Standards Clarification**
[1-OA.2] Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**[1-OA.2]** Word prob w/3 addends (easy types).

[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.)** • **Commutative 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. • 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.)** • **Associative Example: Mental Math** There are 9 red jelly beans, 7 green jelly beans, and 3 black jelly beans. How many jelly beans are there in all? Student: "I know that 7 + 3 is 10. And 10 and 9 is 19. There are 19 jelly beans."	**[1-OA.3]** Commutative Property **&** Associative Property

[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 Greater than 10** The 36 facts that have sums greater than 10 are often considered the most difficult for students to master. Many students will solve these particular facts with Think-Addition, while other students may use other strategies described below, depending on the fact. Regardless of the strategy used, all strategies focus on the relationship between addition and subtraction and often use 10 as a benchmark number. • **Build Up Through 10:** This strategy is particularly helpful when one of the numbers to be subtracted is 8 or 9. Using 10 as a bridge, either 1 or 2 are added to make 10, and then the remaining amount is added for the final sum. Example: 15 – 9 = ☐ "I'll start with 9. I need one more to make 10. Then, I need 5 more to make 15. That's 1 and 5 - so it's 6. 15 – 9 = 6.	**[1-OA.4]** Add and subtract **within 20.**
Opportunity for Depth Standards	**Standards 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 20.** Instructional focus on **doubles**, **plus 8**, **plus 7, plus 6** & **plus 5.** **BUILDING FLUENCY** ***Basic Fact Assessment: Subtraction minuends less than or equal to 10***

[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.	**[1-OA.1] (Medium Type) within 20.** ***Compare Bigger Unknown*** (Version with "more"): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? ***Compare Smaller Unknown*** (Version with "fewer"): Lucy has three fewer apples than Julie. Julie has five apples. How many apples does Lucy have? ***Take From Change Unknown*** Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 – □= 3 ***Put Together/Take Apart Both Addends Unknown*** Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 = 4 + 1 5 = 2 + 3, 5 = 3 + 2

Resources Quarter 3 Unit 7

Engage NY Module 2 Topic A (Lessons 3, 4, 5) – (OA1, OA2, OA3) **https://www.engageny.org/resource/grade-1-mathematics-module-2** **Module 6 Topic A – (OA1)** **https://www.engageny.org/resource/grade-1-mathematics-module-6**	**Georgia Standards Unit 3 – (OA1, OA2, OA3, OA4, OA6)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf**	**Howard County - (OA1, OA2, OA3, OA4, OA6)** **https://hcpss.instructure.com/courses/9414/pages/grade-1-year-at-a-glance** ***(Scroll to find standard)***	**Math in Focus** **Chapter 8, Lessons 1, 2 - (OA4, OA6)** ***Addition & Subtraction within 20*** **Chapter 8, Lesson 3 - (OA1)** ***Story Problems***
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.4 Model with mathematics.
MP.6 Attend to precision.
MP.7 Look for and make use of structure.
MP.8 Look for and express regularity in repeated reasoning.

Qtr. 3: Weeks 4-6
January 29 - February 23 (15 days)
Grade 1, Unit 8

UNIT OVERVIEW: USING PLACE VALUE TO READ, WRITE, REPRESENT & COMPARE NUMBERS

Students develop, discuss, and use efficient, accurate, and generalizable methods **to add and subtract multiples of 10 within 100. 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** • addition • subtraction • counting on • counting back • strategy • benchmark • compare • compose • decompose • equal to • less than • more than • number line • place value: tens & ones • ten frame • ten more • ten less • equation
How does using 10 as a benchmark help us compose numbers? How do we represent a collection of objects using tens and ones? How can making equal groups of ten objects deepen my understanding of the base 10 number system? How can large quantities be counted efficiently?	

Standards/Objectives

Mastery Standards	**Standards Clarification**
[1-OA.8] Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. • First Graders use their understanding of and strategies related to addition and subtraction as described in 1.OA.4 and 1.OA.6 to solve equations with an unknown. Rather than symbols, the unknown symbols are boxes or pictures.	**[1-OA.8]** Determine the unknown number that makes the equation true. ***8*** **+** ☐**=** ***11*** ***5*** **=** ☐**–** ***3*** ***6*** **+** ***6*** **=** ☐
[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 **120**, starting at any number less than 120.

[1-NBT.5] Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. • First Graders build on their counting by tens work in Kindergarten by mentally adding ten more and ten less than any number less than 100. First graders are not expected to compute differences of two-digit numbers other than multiples of ten. Ample experiences with ten frames and the number line provide students with opportunities to think about groups of ten, moving them beyond simply rote counting by tens on and off the decade. Such representations lead to solving such problems mentally.	**[1-NBT.5]** 10 more/10 less
[1-NBT.6] Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. • First Grade students use concrete models, drawings and place value strategies to subtract multiples of 10 from decade numbers (e.g., 30, 40, 50). They often use similar strategies as discussed in 1.OA.4.	**[1-NBT.6]** Add/subtract multiples of 10.
Opportunity for Depth Standards	**Standards Clarification**
[1-NBT.4] Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. • First Grade students use concrete materials, models, drawings and place value strategies to add within 100. They do so by being flexible with numbers as they use the base-ten system to solve problems. The standard algorithm of carrying or borrowing is neither an expectation nor a focus in First Grade.	**[1-NBT.4]** Add **w/in 100** using models and drawings.

[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 20.** Instructional focus on **doubles**, **plus 8**, **plus 7, plus 6** & **plus 5.** **BUILDING FLUENCY** ***Basic Fact Assessment: Subtraction minuends less than or equal to 10***

Continued (Not New)

NB.2, NBT3 Continue for reinforcement and review

Resources Quarter 3 Unit 8

Engage NY Module 4 Topics A (Lesson 5), D, F – (NBT2, NBT4, NBT4 **https://www.engageny.org/resource/grade-1-mathematics-module-4** **Module 6 Topics B, C - (NBT4, NBT5, NBT6)** **https://www.engageny.org/resource/grade-1-mathematics-module-6** **Module 1, Topics D, H – (OA8)** **https://www.engageny.org/resource/grade-1-mathematics-module-1**	**Georgia Standards Unit 3 – (OA8)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf** **Unit 1 – (NBT1)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-1.pdf** **Unit 2 – (NBT6)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-2.pdf** **•Number Hotel** **•Make it Straight** **Unit 5 – (NBT4, NBT5, NBT6)** **https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.pdf**	**Howard County – (OA8, NBT1, NBT2, NBT3, NBT4, NBT5, NBT6)** **https://hcpss.instructure.com/courses/9414/pages/grade-1-year-at-a-glance** ***(Scroll to find standard)***	**Math in Focus** **Chapter 16, Lesson 3 (NBT1)** ***Counting and Number Sense***

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.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.
MP.8 Look for and express regularity in repeated reasoning.

Qtr. 3: Weeks 7-9
February 26 - March 16 (16 Days)
Grade 1, Unit 9

UNIT OVERVIEW: MEASUREMENT AND DATA

The measure of an attribute is a count of how many units are needed to fill, cover, or match the attribute of the object being measured. Students need to understand what a unit of measure is and how it is used to find a measurement. They need to predict the measurement, find the measurement, and then discuss the estimates, errors, and the measuring process. It is important for students to measure the same object with differently sized units.

Students will continue to interpret data up to three categories. They will pose questions about the number of items in each category, the total number of items, and compare the number of items in categories. The total number of items to be sorted should be less than or equal to 100 to allow for sums and differences less than or equal to 100.

Essential Questions	**Key Vocabulary** • units • compare • data • estimate • graph • length • more • less • shorter • shortest • longer • longest • tally marks • chart • measure • order • height • gap • overlap • most • least • same • category • taller • tallest
How can we measure the length of an object? How can we tell which of two objects is longer than the other? How can we order a group of objects by their length? How does using an object help us when measuring another object? How can we organize and display the data we collected into three categories to create a graph? How can we use counting to compare objects in a set?	

Standards/Objectives

Mastery Standards	Standards Clarification
[1-MD.1] Order three objects by length; compare the lengths of two objects indirectly by using a third object. • First Grade students continue to use direct comparison to compare lengths. • *Direct* comparison means that students compare the amount of an attribute in two objects without measurement. • *Indirect* comparison example: If we know that Aleisha is taller than Barbara and that Barbara is taller than Callie, then we know that Aleisha is taller than Callie, even if Aleisha and Callie never stand back to back.	**[1-MD.1]** Order objects by length

Opportunity for Depth Standards	Standards Clarification
[1-MD.2] Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. • Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	**[1-MD.2]** Measuring with non-standard units
[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 20.** Instructional focus on **doubles**, **plus 8**, **plus 7, plus 6** & **plus 5.** **BUILDING FLUENCY** ***Basic Fact Assessment: Subtraction minuends less than or equal to 10***
Supporting Standards	**Standards Clarification**
[1-MD.4] Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	**[1-MD.4]** Working with graphs and tally charts
Continued (Not New)	
1.G1, 1.G2 Continue for reinforcement and review	

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Resources Quarter 3 Unit 9			
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Focus Standards for Mathematical Practice			
MP.7 Look for and make use of structure.			
MP.8 Look for and express regularity in repeated reasoning.			