2018 – 2019

Kindergarten
MATHEMATICS
Curriculum Map

Volusia County Schools

Mathematics Florida Standards

Elementary Instructional Math Block

Time	Components	Description
5-15 minutes	Number Talks	Short, daily fluency routine that engages students in meaningful conversations around purposefully crafted computation problems that are solved using number relationships and the structure of numbers. Students are asked to communicate their thinking when presenting and justifying solutions to problems they solve mentally while the teacher records their ideas with mathematical precision. These exchanges lead to the development of more accurate, efficient, and flexible strategies.
5 minutes	Opening: Hook/Coherence Connection	The teacher will engage students to create interest for the whole group lesson or review prerequisite standards to prepare students to make explicit connections that will allow students to apply and extend previous learning when interacting with the lesson's grade-level content.
15 minutes	Whole Group: Mini Lesson/Guided Practice	Used prior to small group to introduce/practice new knowledge and skills or after small group to refine/practice strategies discovered by students. The lesson focuses on the depth of grade-level cluster(s), grade-level content standard(s), or part(s) thereof, intentionally targeting the aspect(s) of rigor (conceptual understanding, procedural skill and fluency, application) called for by the standard(s) being addressed. During this time, the teacher makes the mathematics of the lesson explicit using clear and correct explanations, representations, tasks, and/or examples. The teacher provides opportunities for all students to work with and practice grade-level problems and exercises, deliberately checking for understanding throughout the lesson and adapting the lesson according to student understanding. The teacher poses high-quality questions and problems that prompt students to share their developing thinking about the content of the lesson. Class created anchor charts are constructed by strategically adding key concepts throughout the topic's lessons.
30-40 minutes	Small Collaborative Groups/ Independent Practice	The teacher encourages reasoning and problem solving by posing challenging problems that offer opportunities for student choice of appropriate tools and promote productive struggle. Students work in small, flexible collaborative groups to engage in mathematical tasks while the teacher circulates and asks questions to elicit thinking, providing support or extensions as needed. The teacher asks students to explain and justify work, connecting and developing students' informal language to precise mathematical language appropriate to their grade, and provides feedback that helps students revise initial work. The teacher makes observations to select and sequence appropriate strategies for students to share during the class discussion.
5 minutes	Closure: Summarize	The teacher strengthens all students' understanding of the content by strategically sharing a variety of students' representations and solution methods. The teacher facilitates the summary of the mathematics with references to student work and by creating the conditions for student conversations where students are encouraged to talk about each other's thinking in order to reinforce the purpose of the lesson.
Formative techniques occur throughout the framework to drive instruction, guide collaborative grouping, and evaluate which students will need intervention/enrichment.		

Kindergarten Math Instructional Calendar

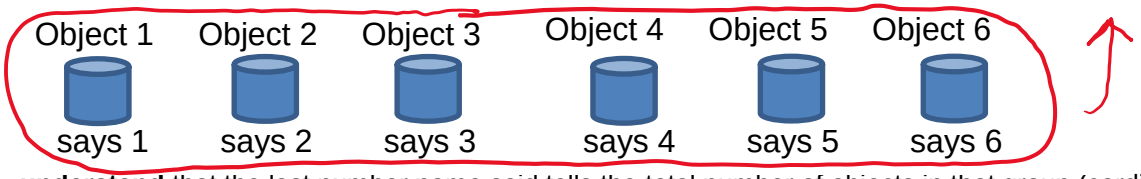
Units		Topics	Standards	Suggested Dates
Unit 1	1	Rote counting and understanding amount counted (10 days)	**K.CC.1.1** (only to 20 by ones) **K.CC.2.4** (a, b) (only cardinality for b)	**Aug.13-28** Aug. 13-15 (Staggered start)
	2	Reading and writing numbers and counting "How many?" within 10 (10 days)	**K.CC.1.3** (only within 10) **K.CC.2.4** (b) (does not involve arrangement) **K.CC.2.5** (only within 10 in a line)	**Aug. 29- Sept. 12** Sept. 3 (Labor Day)
	3	Classifying and counting objects (10 days)	**K.CC.2.5** (only within 10 in a line or array) **K.MD.2.3** (only classifying and counting) **K.G.1.1** (not using names of shapes)	**Sept. 13-27** Sept. 17 (TDD)
	4	Understanding and representing addition within 5 (10 days)	**K.CC.2.4** (c) **K.OA.1.1** (only addition, not using expressions or equations)	**Sept. 28- Oct. 11**
Unit 2	5	Identifying and describing shapes (10 days)	**K.G.1.1** **K.G.1.2** **K.G.2.5** (not drawing shapes)	**Oct. 12-26** Oct. 15 (TDD)
	6	Adding and subtracting within 5 (11 days)	**K.OA.1.1** (not using expressions or equations) **K.OA.1.2** (only within 5) **K.OA.1.a** (only within 5, not using equations)	**Oct. 29-Nov 13** Nov. 12 (Veterans Day)
	7	Rote counting to 50 and representing up to 20 objects (10 days)	**K.CC.1.1** (only to 50 by ones) **K.CC.1.2** **K.CC.1.3** **K.CC.2.4** (b) **K.CC.2.5**	**Nov. 14- Dec. 4** Nov. 19-23 (Thanksgiving)
	8	Describing and comparing measurable attributes (10 days + 1 Flex Day)	**K.MD.1.1** **K.MD.1.2**	**Dec. 5-19** Dec. 20 (TDD) Dec. 21- Jan. 6 (Winter Break)
Unit 3	9	Comparing numbers (10 days)	**K.CC.3.6** **K.CC.3.7**	**Jan. 7-18** Jan. 21 (MLK)
	10	Understanding addition and subtraction within 10 (12 days)	**K.OA.1.1** **K.OA.1.2** **K.OA.1.a**	**Jan. 22- Feb. 6**
	11	Classifying two- and three-dimensional shapes (10 days)	**K.MD.2.3** **K.G.1.3** **K.G.2.4**	**Feb. 7-21** Feb. 18 (President's Day)
	12	Composing ten (10 days)	**K.OA.1.4**	**Feb. 22- Mar. 7**
Unit 4	13	Counting to 100 by ones and tens (7 days)	**K.CC.1.1** **K.CC.1.2**	**Mar. 8-26** March 15 (TDD) March 18-22 (Spring Break)
	14	Developing foundations of place value (11 days)	**K.NBT.1.1**	**Mar. 27- Apr. 10**
	15	Modeling and composing shapes (10 days)	**K.G.2.5** **K.G.2.6**	**Apr. 11-24**
	16	Measuring lengths with non-standard units (10 days)	**K.MD.1.a**	**Apr. 25- May 8**
	17	Solving problems and demonstrating fluency within 5 (15 days + 1 Flex Day)	**K.OA.1.2** **K.OA.1.5**	**May 9- 31** May 27 (Memorial Day)

Unit 1

PACING: August 13 – Oct. 11

Topic 1: Rote counting and understanding amount counted	**Pacing:** August 13 - 28

To start the year, Kindergarteners practice the count sequence and start to develop understanding of cardinality and one-to-one correspondence. Counting is started early and practiced often throughout the year because becoming fluent in the counting sequence enables students to focus on pairings involved when counting objects. This topic focuses on children organizing objects in lines to count effectively. More difficult arrangements will be addressed in subsequent topics.

Standards		**Academic Language**
Count ~~to 100~~ by ones ~~and by tens~~.	**MAFS.K.CC.1.1**	sequence group number name set
Students will: • **count** orally to 20 by ones.		
Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. ~~The number of objects is the same regardless of their arrangement or the order in which they were counted.~~	**MAFS.K.CC.2.4**	
Students will: • **say** number names in standard order (e.g., one, two, three, four, five …) when counting up to 10 objects arranged in a line. • **count** up to 10 objects arranged in a line by pairing them with one and only one number name (one-to-one correspondence). E.g., The student touches (and may move to organize) the first object and says one, touches the second object and says two, touches the third object and says three, etc., and then circles group with finger and says, "There are six objects."  • **understand** that the last number name said tells the total number of objects in that group (cardinality).		
2. Reason abstractly and quantitatively.	**MAFS.K12.MP.2.1**	
Topic Comments: **K.CC.1.1** is developed throughout the year. The target for this topic is counting to 20 by ones, but this number should not be a limit, students who are proficient at counting to 20 may proceed. The standard is extended to counting to 50 by ones in topic 7. It is crucial that students know the number names and count sequence and incorporate counting in daily activities in the classroom. The target of **K.CC.2.4a** in this topic is for students to count up to 10 objects accurately. Students need time to count lesser quantities to develop one-to-one correspondence and cardinality. **K.CC.2.4b** is repeated in full in topic 2 to establish conservation of number. Students are working to make the connection between the (verbal) number names and quantities (**MP.2**).		

Topic 2: Reading and writing numbers and counting "How many?" within 10	**Pacing:** August 29 – Sept. 12

Extending their work with the counting sequence in the previous topic, students now read and write numerals and represent a number of objects. The focus of this topic is connecting written numerals to quantities, furthering students' understanding of one-to-one correspondence. They usually indicate their understanding of this one-to-one correspondence by pointing to the objects or moving them as they say the numbers, pairing each number name with one and only one object.

Standards		**Academic Language**
Read and write numbers ~~from 0 to 20~~. Represent a number of objects with a written numeral ~~0-20~~ (with 0 representing a count of no objects). *NOTE: This standard has been amended in Florida to include reading numbers within this range.*	**MAFS.K.CC.1.3**	group number name numeral set sequence
Students will: • **read** numbers 0-10. • **write** numbers 0-10. • **represent** a group of objects arranged in a line with a written numeral 0-10. **NOTE:** Reversals of numerals are anticipated. While reversals should be pointed out to students and correct formation modeled in instruction, the emphasis of the standard is on the use of numerals to represent the quantities rather than the correct handwriting formation of the actual numeral itself.		
Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of ~~their arrangement or~~ the order in which they were counted.	**MAFS.K.CC.2.4**	
Students will: • **understand** that the last number name said tells the total number of objects in that group (cardinality). • **understand** that the number of objects is the same regardless of the order in which they were counted (order- irrelevance).		
Count to answer "how many?" questions about ~~as many as 20~~ things arranged in a line, ~~a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects~~.	**MAFS.K.CC.2.5**	
Students will: • **count** up to 10 objects arranged in a line to answer "how many?" questions.		
6. Attend to precision.	**MAFS.K12.MP.6.1**	
Topic Comments: The focus of **K.CC.1.3** in this topic is for students to read and write the numerals 0-10. They will be reading and writing numerals 11-20 in topic 7. **K.CC.2.4** will be finalized in topic 7 to include conservation of cardinality with different arrangements. **K.CC.2.5** emphasizes the practice of counting accurately when objects are organized in different arrangements. Students start by organizing up to 10 objects in a straight line. Other arrangements will be addressed in topic 3 and topic 7. Students attend to precision in both their explanations and particular strategies they use to count (**MP.6**).		

Topic 3: Classifying and counting objects	**Pacing:** September 13 - 27
The focus of this topic is sorting and classifying objects into given categories (with up to 10 objects in each group) and using positional language to describe the objects. Students develop geometric concepts and spatial reasoning from experience describing (informally) the shape of objects and the relative positions of objects. Students need practice using their informal language to develop effective use of vocabulary and to develop geometrical perspectives. This context of classifying objects supports continued development of counting skills. In this topic, students continue counting within 10 and writing numerals 1 -10 to represent quantities of objects in the various categories.	

Standards		**Academic Language**
Count to answer "how many?" questions about ~~as many as 20~~ things arranged in a line, a rectangular array, ~~or a circle, or as many as 10 things in a scattered configuration~~; given a number ~~from 1–20~~, count out that many objects.	**MAFS.K.CC.2.5**	above alike behind below beside category classify compare different flat group in front of next to position set shape solid sort
Students will: • **count** up to 10 objects arranged in a line or rectangular array to answer "how many?" questions. E.g., Teacher, "How many shapes do you see?"  Student, "1, 2, 3. There are three shapes." • **count** out up to 10 objects when given a number from 1-10. E.g., Teacher, "Show me 8 cubes". Student counts out 8 cubes.		
Classify objects into given categories; count the numbers of objects in each category ~~and sort the categories by count.~~	**MAFS.K.MD.2.3**	
Students will: • **classify** (sort) objects into given categories/groups of up to 10 objects per category and **count** the number of objects in each category. **NOTE:** A single group of objects might be classified in different ways, depending on which attribute has been identified as the attribute of interest. For example, some shapes may be open and some shapes may be closed. Some of the same shapes may have curved sides and some of the shapes may have straight sides.		
Describe objects in the environment ~~using names of shapes~~, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	**MAFS.K.G.1.1**	
Students will: • **describe** shapes of objects in the environment using informal language (e.g, shaped-like a ball, box, or can) • **describe** the position of objects in relation to other objects using terms such as *above, below, beside, in front of, behind, and next to*. **NOTE:** Shapes of objects should be limited to squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.		
1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others.	**MAFS.K12.MP.1.1** **MAFS.K12.MP.3.1**	

Topic Comments: When addressing **K.CC.2.5**, it is important that children count accurately when objects are organized in different arrangements. They start by organizing up to 10 objects in a straight line or in a rectangular array. Other arrangements will be addressed in topic 7. This topic introduces counting out a given number of objects, which is more difficult than just counting that many objects. **K.MD.2.3** will be finalized in Topic 11 to include sorting the categories by count, after the students have had experience with comparing sets of objects. In this topic, **K.G.1.1** calls for students to begin with familiar objects in their environment in the shape of squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres. Development of spatial reasoning is the focus of this topic. Students will describe objects using the formal names of the shapes in topic 5. Students make sense of the problems by counting and recounting (**MP.1**) and then communicate this understanding by justifying their strategies and reasoning (**MP.3**).	

Topic 4: Understanding and representing addition within 5	**Pacing:** September 28 – October 11

This topic connects students' experience with counting to joining groups of objects. Students begin by modeling addition situations using concrete models and counting strategies to make sense of adding to and putting together. Students will likely use their fingers to keep track of the addends, so it is beneficial for students to develop rapid visual recognition of the numbers 0–5 on their fingers (subitizing).

Standards		**Academic Language**
Understand the relationship between numbers and quantities; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.	**MAFS.K.CC.2.4**	adding to addition after combining join put together represent set
Students will: • **understand** that "one more" is the next counting number. • **say** "how many" are in the group when one more object is added to a group of less than 5 without recounting the whole group.		
Represent addition ~~and subtraction~~ with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, ~~expressions, or equations~~.	**MAFS.K.OA.1.1**	
Students will: • **represent** addition situations of putting together and adding to within 5 using objects, fingers, sounds (e.g., claps), or acting out situations. • **represent** addition situations of putting together and adding to within 5 using mental images, drawings, or verbal explanations. **NOTE:** Students will have many opportunities to concretely represent and solve addition word problems before introducing the addition (+) and equal (=) symbols in topic 10.		
1. Make sense of problems and persevere in solving them. 4. Model with mathematics.	**MAFS.K12.MP.1.1** **MAFS.K12.MP.4.1**	
Topic Comments: The emphasis of **K.OA.1.1** in this topic is for students to represent the addition situations of putting together and adding to within 5. Subtraction will be addressed in topic 6 and students will extend this number range to addition and subtraction situations within 10 during topic 10. Students create models of real-life mathematical situations with objects, fingers, or drawings and check to make sure that their selected model accurately matches the problem context (**MP.4)**. In Kindergarten, students' work focuses on concrete manipulatives before moving to pictorial representations. Students practice explaining their models and discuss how different models are similar and different **(MP.1)**.		

Unit 2

October 12 – December 19

Topic 5: Identifying and describing shapes | **Pacing:** October 12 - 26

In this topic, students build on their previous work with spatial reasoning, using both positional relationships and formal names of shapes. While discussing the different attributes of shapes, students will model these shapes using concrete materials.

Standards		Academic Language
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	**MAFS.K.G.1.1**	above behind below beside circle cone cube cylinder hexagon in front of orientation next to rectangle size sphere square triangle
Students will: • **describe** objects in the environment using names of shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). • **describe** the position of objects in relation to other objects using terms such as *above, below, beside, in front of, behind, and next to*.		
Correctly name shapes regardless of their orientations or overall size.	**MAFS.K.G.1.2**	
Students will: • **name** shapes regardless of size or orientation (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). E.g., Triangles  Hexagons  E.g., Students should be able to recognize that a square turned onto its vertex/corner (■ → ◆) is still a square.		
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) ~~and drawing shapes~~.	**MAFS.K.G.2.5**	
Students will: • **model** shapes in the real-world by building shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). E.g., "The face of the door is shaped like a rectangle. I used 4 sticks to model the rectangle." "The globe is shaped like a sphere, so I used a ball of clay to model the sphere."		
2. Reason abstractly and quantitatively. 7. Look for and make use of structure.	**MAFS.K12.MP.2.1** **MAFS.K12.MP.7.1**	
Topic Comments: **K.G.1.1** is finalized in this topic to include formal names of shapes. **K.G.2.5** will be revisited in topic 15 in which students will also be expected to draw shapes. Mathematically proficient students look closely to discern the structure of shapes (**MP.7**) and have the ability to abstract shapes from objects in the environment (**MP.2**).		

Topic 6: Adding and subtracting within 5	**Pacing:** October 29 – November 13

In this topic, students apply counting strategies and their experience with addition to develop understanding of subtraction as they encounter problems involving taking apart and taking from situations. Students will add and subtract using Level 1 methods (e.g., direct modeling by counting all or taking away), representing the situation or numerical problem with groups of objects, a drawing, or fingers. Put Together/Take Apart situations with Both Addends Unknown are important because they allow Kindergarteners to explore various compositions and decompositions of each number (*See Common Addition and Subtraction Situations Table on page 27.*). This supports development of addition and subtraction concepts.

Standards		**Academic Language**
Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, ~~expressions, or equations~~.	**MAFS.K.OA.1.1**	addends combining difference put together represent subtracting from taking apart taking from total
Students will: • **represent** addition and subtraction situations of putting together, adding to, taking apart, and taking from within 5 using objects, fingers, sounds (e.g., claps), or acting out situations. • **represent** addition and subtraction situations of putting together, adding to, taking apart, and taking from within 5 using mental images, drawings, or verbal explanations. **NOTE:** Students will have many opportunities to concretely represent and solve addition word problems before introducing the addition (+) and equal (=) symbols in topic 10.		
Solve addition and subtraction word problems, and add and subtract ~~within 10~~, e.g., by using objects or drawings to represent the problem. (Students are not required to independently read the word problems).	**MAFS.K.OA.1.2**	
Students will: • **solve** addition and subtraction word problems involving putting together, adding to, taking apart, and taking from within 5 using objects or drawings.		
Use addition and subtraction ~~within 10~~ to solve word problems involving both addends unknown, e.g., by using objects, drawings, ~~and equations with symbols for the unknown numbers to represent the problem.~~ (Students are not required to independently read the word problems). *NOTE: This standard is an added Florida standard.*	**MAFS.K.OA.1.a**	
Students will: • **solve** addition and subtraction word problems with both addends unknown involving putting together and taking apart within 5 using objects or drawings.		
4. Model with mathematics. 5. Use appropriate tools strategically.	**MAFS.K12.MP.4.1** **MAFS.K12.MP.5.1**	
Topic Comments: **K.OA.1.1** was introduced in topic 4. This standard is extended in this topic to address both addition and subtraction situations involving putting together, adding to, taking apart, and taking from. The goal of **K.OA.1.2** in this topic is to solve addition and subtraction situations within 5. Students will extend this number range to addition and subtraction situations within 10 during topic 10. **K.OA.1.a** requires time for students to experiment with various compositions and decompositions of lesser numbers (within 5) before working with greater numbers. Students use manipulatives and drawings (**MP.5**) to create models representing the given situation (**MP.4**).		

Topic 7: Rotate counting to 50 and representing up to 20 objects	**Pacing:** November 14 – December 4
In this topic, students extend the counting sequence to 50 and develop their ability to represent up to 20 objects both numerically and visually. This includes effectively counting objects in more difficult configurations—e.g. in a circle.	

Standards		**Academic Language**
Count ~~to 100~~ by ones ~~and by tens~~.	**MAFS.K.CC.1.1**	count forward group sequence set
Students will: • **count** orally to 50 by ones.		
Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	**MAFS.K.CC.1.2**	
Students will: • **count** forward orally from a given number within 50 (i.e., instead of having to begin at 1). • **understand** that numbers follow the same order no matter where in the counting sequence you begin (stable-order principle).		
Read and write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). *NOTE: This standard has been amended in Florida to include reading numbers from 0-20.*	**MAFS.K.CC.1.3**	
Students will: • **read** numbers 0 - 20. • **write** numbers 0 - 20. • **represent** a group of objects with a written numeral 0 – 20 (with 0 representing a count of no objects). **NOTE:** Reversals of numerals of anticipated. While reversals should be pointed out to students and correct formation modeled in instruction, the emphasis of the standard is on the use of numerals to represent the quantities rather than the correct handwriting formation of the actual numeral itself.		
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	**MAFS.K.CC.2.5**	
Students will: • **count** up to 20 objects arranged in a line, rectangular array, or circle to answer "how many?" questions. • **count** up to 10 objects arranged in a scattered configuration. • **count** out up to 20 objects when given a number from 1-20.		
Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	**MAFS.K.CC.2.4**	
Students will: • **understand** that the last number name said tells the total number of objects in that group (cardinality). • **understand** that the number of objects is the same regardless of their arrangement or the order in which they were counted (order- irrelevance).		

6. Attend to precision. 7. Look for and make use of structure.	**MAFS.K12.MP.6.1** **MAFS.K12.MP.7.1**	
Topic Comments: The target for **K.CC.1.1** in this topic is rote counting to 50; but this number should not be a limit, students who are proficient at counting to 50 may proceed. The standard is extended to counting to 100 by ones and tens in topic 13. **K.CC.1.2** is a prerequisite for the counting on strategy emphasized in Grade 1 (**1.OA.3.6**). **K.CC.2.5** is finalized in this topic to include counting objects arranged in a scattered configuration. **K.CC.2.4** is finalized in the topic to include the understanding that the number of objects counted is the same regardless of their arrangement or the order in which they were counted. Students should be given opportunities to discuss the structure of the number system (**MP.7**) and precisely express how they know that their count is accurate (**MP.6**)		

Topic 8: Describing and comparing measurable attributes	**Pacing:** December 5 – 19
In this topic, students explore non-standard measurement concepts using comparative and descriptive vocabulary. Through conversation, students learn to identify and distinguish different measurable attributes.	

Standards		**Academic Language**
Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	**MAFS.K.MD.1.1**	attribute compare length measurable weight
Students will: • **describe** measurable attributes of objects such as length or weight. • **describe** several measurable attributes of a single object.		
Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*	**MAFS.K.MD.1.2**	
Students will: • **compare** the measurable attributes of two objects side by side and describe the difference. E.g., A student may line up two blocks and say, "The gray block is longer than the white one."  E.g., A student may put a block on one side of the scale and a book on the other side, and say, "The book is heavier than the block." **NOTE:** Students will compare two objects directly without measuring; the length of objects will be measured using non-standard units in topic 16 (K.MD.1.a).		
3. Construct viable arguments and critique the reasoning of others.	**MAFS.K12.MP.3.1**	
Topic Comments: Students use comparative language to justify their conclusions (**MP.3**).		

Unit 3

PACING: January 7 – March 7

Topic 9: Comparing numbers	**Pacing:** January 7 - 18

This topic focuses on students identifying which of two groups of objects has more than the other or if the two groups have the same number of objects. They can then use this understanding, or their understanding of the counting sequence, to compare numbers between 1 and 10 presented as written numerals.

Standards		**Academic Language**
Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	**MAFS.K.CC.3.6**	compare equal greater than less than
Students will: • **identify** whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (up to 10 objects per group). **NOTE:** Students will use language to describe these comparisons. Mathematical symbols (<, >, =) used for comparison will be introduced in Grade 1 (1.NBT.2.3).		
Compare two numbers between 1 and 10 presented as written numerals.	**MAFS.K.CC.3.7**	
Students will: • **compare** the values of two written numerals between 1 and 10 using the language *greater than, less than,* or *equal to*.		
2. Reason abstractly and quantitatively.	**MAFS.K12.MP.2.1**	
Topic Comments: **K.CC.3.6** calls for students to have practice working with concrete objects when comparing. This develops understanding of the relationship between quantities and written numerals. In **K.CC.3.7**, students can use their experience with counting concrete objects and the counting sequence to compare two written numerals. Note that students will use language to describe these comparisons. Mathematical symbols (<, >, =) used for comparison will be introduced in Grade 1 (1.NBT.2.3). Students connect concrete representations of numbers to the written numerals (**MP.2**)		

Topic 10: Understanding addition and subtraction within 10	**Pacing:** January 22 – February 6	
In this topic, students extend their understanding from topic 6 to include addition and subtraction up to 10. Put Together/Take Apart situations with Both Addends Unknown are important because they allow Kindergarteners to explore various compositions and decompositions of each number (See *Common Addition and Subtraction Situations Table* on page 27). Practice with composing and decomposing numbers supports the development of subitizing and numeric reasoning. This is essential to developing more sophisticated addition and subtraction strategies this year and in later grades.		
Standards		**Academic Language**
Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	**MAFS.K.OA.1.1**	combining difference equal put together solve subtracting from taking apart taking from total
Students will: • **represent** addition and subtraction situations of putting together, adding to, taking apart, and taking from within 10 using objects, fingers, sounds (e.g., claps), or acting out situations. • **represent** addition and subtraction situations of putting together, adding to, taking apart, and taking from within 10 using mental images, drawings, verbal explanations, expressions or equations. **NOTE:** An equation has an equal sign to show that two values are equivalent. E.g., 7 + 2 = 9 or 9 = 7 + 2. An expression does not have an equal sign and represents a single value. E.g., 7 + 2		
Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. (Students are not required to independently read the word problems).	**MAFS.K.OA.1.2**	
Students will: • **solve** addition and subtraction word problems involving putting together, adding to, taking apart, and taking from within 10 using objects or drawings.		
Use addition and subtraction within 10 to solve word problems involving both addends unknown, e.g., by using objects, drawings, and equations with symbols for the unknown numbers to represent the problem. (Students are not required to independently read the word problems).	**MAFS.K.OA.1.a**	
Students will: • **solve** addition and subtraction word problems with both addends unknown involving putting together and taking apart within 10 using objects, drawings or equations with symbols for the unknown numbers to represent the problem.		
4. Model with mathematics. 5. Use appropriate tools strategically.	**MAFS.K12.MP.4.1** **MAFS.K12.MP.5.1** **MAFS.K12.MP.6.1**	
Topic Comments: In this topic, **K.OA.1.1** is included to emphasize the relationship between addition and subtraction using various strategies and is finalized in this topic with the use of expressions and equations. **K.OA.1.a** is finalized in this topic with the use of symbols representing unknown numbers in addition and subtraction equations. This standard is foundational for addition and subtraction strategies in Grade 1 (**1.OA.3.6**). Students model addition and subtraction situations (**MP.4**) by using objects, their fingers, and math drawings (**MP.5**). Students should also explain their strategies explicitly and discuss similarities and differences with other strategies (**MP.6**).		

Topic 11: Classifying two- and three- dimensional shapes	**Pacing:** February 7 – 21	
In this topic, students continue to develop the concept of classifying and counting objects—this time in the context of classifying two- and three-dimensional shapes.		
Standards		**Academic Language**
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	**MAFS.K.MD.2.3**	attributes category classify compare sort two-dimensional three-dimensional
Students will: • **classify** objects (squares, circle, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres) into given categories with up to 10 shapes per category and **count** the number of shapes in each category. E.g., 5 two-dimensional shapes and 6 three-dimensional shapes. • **sort** categories according to their respective number of shapes. E.g., "Which category has the greatest number of shapes? Which category has the least number of shapes? Are there any categories with an equal number of shapes?"		
Identify shapes as two-dimensional (lying in a plane, "flat") or three- dimensional ("solid").	**MAFS.K.G.1.3**	
Students will: • **identify** shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres) as two-dimensional or three-dimensional.		
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	**MAFS.K.G.2.4**	
Students will: • **analyze** and **compare** two-dimensional and three-dimensional shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres) using informal language to describe their similarities and differences.		
3. Construct viable arguments and critique the reasoning of others. 7. Look for and make use of structure.	**MAFS.K12.MP.3.1** **MAFS.K12.MP.7.1**	
Topic Comments: **K.MD.2.3** is repeated here to provide students the opportunity to practice classifying objects in the context of geometric figures. This standard is finalized in this topic to include sorting the categories according their respective number of objects. **K.G.2.4** includes students identifying faces of three-dimensional shapes as two-dimensional geometric figures. Students look for similarities and differences (**MP.7**) and present their own arguments and respond to the arguments of others (**MP.3**).		

Topic 12: Composing ten	**Pacing:** February 22 – March 7
In this topic, students use objects and drawings to identify partners for any number 1 to 9 to compose ten. Composing ten is a foundation for understanding the base-ten system that will develop in later grades, and during this topic teachers help children prepare for this by drawing special attention to the number 10.	

Standards		Academic Language
For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	**MAFS.K.OA.1.4**	make 10
Students will: • **determine** the number to add to a given number 1-9 to make 10, using objects or drawings. • **record** the answer with drawings or an equation.		
7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	**MAFS.K12.MP.7.1** **MAFS.K12.MP.8.1**	
Topic Comments: **K.OA.1.4** is foundational for addition and subtraction strategies in Grade 1 (**1.OA.3.6**). Students look for shortcuts by analyzing patterns to find all of the combinations that make 10 (**MP.7, MP.8**).		

Unit 4

PACING: March 8 – May 31

Topic 13: Counting to 100 by ones and tens	**Pacing:** March 8 – 26
The focus of this topic is to extend the counting sequence to 100 and introduce the pattern of counting by tens.	

Standards		**Academic Language**
Count to 100 by ones and by tens.	**MAFS.K.CC.1.1**	count forward pattern sequence
Students will: • **count** orally to 100 by ones and by tens.		
Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	**MAFS.K.CC.1.2**	
Students will: • **count** forward orally from a given number within 100 (i.e., instead of having to begin at 1). • **understand** that numbers follow the same order no matter where in the counting sequence you begin (stable-order principle).		
7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	**MAFS.K12.MP.7.1** **MAFS.K12.MP.8.1**	
Topic Comments: **K.CC.1.1** is finalized in this topic to include counting by tens. **K.CC.1.2** is finalized in this topic to provide an opportunity to extend this ability of counting from a given number with this new range of numbers. Students discover and explain patterns in the number system and apply this understanding to counting (**MP.7**, **MP.8**).		

Topic 14: Developing foundations of place value	**Pacing:** March 27 – April 10

The focus of this topic is building a foundational understanding of the base-ten system by developing an understanding of the teen numbers as being composed of ten ones and some more ones. The number range in this standard emphasizes the understanding of *ten ones* rather than an understanding of the *tens* "place". This work is an opportunity for students to start counting on, which is a Level 2 strategy for addition, that will be emphasized in Grade 1.

Standards		Academic Language
Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	**MAFS.K.NBT.1.1**	compose decompose ones regroup "*ten* ones"
Students will: • **regroup** a set of 11-19 objects into a group of ten objects with leftovers. • **compose** numbers 11-19 using ten ones and some further ones; show work with a drawing or an equation. • **decompose** numbers 11-19 using ten ones and some further ones; show work with a drawing or an equation. • **understand** that teen numbers are composed of 10 ones and one, two, three, four, five, six, seven, eight, or nine ones.		
7. Look for and make use of structure.	**MAFS.K12.MP.7.1**	
Topic Comments: **K.NBT.1.1** is a precursor for further development of place value understanding in Grade 1—viewing ten ones as a new unit called a *ten* (**1.NBT.2.2**). Students explore the structure of ten ones and some more ones (**MP.7**) using various strategies—such as ten-frames and double ten-frames—to represent the "teen" numbers.		

Topic 15: Modeling and composing shapes	**Pacing:** April 11– 24

In this topic, students extend their understanding of creating and composing shapes to include drawing shapes. It is important for students to have opportunities for open exploration in composing shapes. For example, "What shape can you make with these two triangles?" Students build understandings of shapes and their properties, becoming able to do increasingly elaborate compositions, decompositions, and iterations of the two.

Standards		Academic Language
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	**MAFS.K.G.2.5**	compose model
Students will: • **model** shapes in the real-world by building shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). • **model** shapes in the real-world by drawing shapes (2-D shapes only: squares, circles, triangles, rectangles, hexagons).		
Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*	**MAFS.K.G.2.6**	
Students will: • **put** shapes together to make new larger shapes. E.g., "Can you join these 2 ◣ ◣ to make a rectangle?").		
6. Attend to precision.	**MAFS.K12.MP.6.1**	
Topic Comments: **K.G.2.5** is finalized in this topic to extend students' understanding of creating shapes to include drawing. With repeated experiences with modeling these shapes, students become more precise in their compositions and descriptions of shapes (**MP.6**).		

Topic 16: Measuring lengths with non-standard units	**Pacing:** April 25 – May 8	
This topic lays the groundwork for the use of the standard measurement unit of inches in Grade 1 (1.MD.1.a) and the general concept of length. Students learn about the meaning and processes of measurement, including underlying concepts such as iterating (the act of building up the length of an object with equal-sized units).		
Standards		**Academic Language**
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*. *NOTE: This standard is an added Florida standard. It is a Grade 1 Common Core State Standard (MACC.1.MD.A.2).*	**MAFS.K.MD.1.a**	gaps length measure overlaps
Students will: • **determine** how to use a shorter object to measure the length of a longer object and **explain** why it is important to avoid gaps and overlaps. • **represent** the length of the longer object, in terms of the shorter object, with a whole number (e.g., I lined up 1, 2, 3 cubes. The pencil is 3 cubes long).		
3. Construct viable arguments and critique the reasoning of others. 5. Use appropriate tools strategically.	**MAFS.K12.MP.3.1** **MAFS.K12.MP.5.1**	
Topic Comments: Giving students opportunities to select and use appropriate non-standard measurement tools (**MP.5**) and justify and critique strategies for measurement (**MP.3**) supports conceptual understanding of measurement rather than just procedural skills.		

Topic 17: Solving problems and demonstrating fluency within 5	**Pacing:** May 9 – 31

This topic finalizes addition and subtraction problem solving within 10 and fluency within 5. By the end of Kindergarten, students should have experience with four of the problem types in the *Common Addition and Subtraction Situations Table* (see pg. 27)*:*

- Add To with Result Unknown
- Take From with Result Unknown
- Put Together/Take Apart with Total Unknown
- Put Together/Take Apart with Both Addends Unknown

Standards		**Academic Language**
Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	**MAFS.K.OA.1.2**	add to addends addition difference equal put together solve subtraction take apart take from
Students will: • **solve** addition and subtraction word problems involving putting together, adding to, taking apart, and taking from within 10 using objects or drawings.		
Fluently add and subtract within 5.	**MAFS.K.OA.1.5**	
Students will: • **fluently add** and **subtract** numbers within 5. **NOTE:** Computational fluency is defined as accuracy, efficiency, and flexibility.		
3. Construct viable arguments and critique the reasoning of others. 8. Look for and express regularity in repeated reasoning.	**MAFS.K12.MP.3.1** **MAFS.K12.MP.8.1**	
Topic Comments: Students work towards fluency with **K.OA.1.5** by relying on their experience with decompositions of numbers and with Add To and Take From situations. Students have developed strategies for solving addition and subtraction problems and should now be able to explain their own strategies and understand the approaches of others (**MP.3**). They recognize when calculations are repeated and look for both general methods and shortcuts (**MP.8**).		

Critical Areas for Mathematics in Kindergarten

In Kindergarten, instructional time should focus on two critical areas: (1) representing, relating and operating on whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in kindergarten should be devoted to number than to other topics.

1. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as 5 + 2 = 7 and 7 – 2 = 5. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

2. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations), measurable attributes (e.g., length or weight) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Kindergarten Major, Supporting, and Additional Work

Topic	Title	Major Work	Supporting Work	Additional Work
1	Rote counting and understanding amount counted	K.CC.1.1, K.CC.2.4		
2	Reading and writing numbers and counting “How many?” within 10	K.CC.1.3, K.CC.2.4 (b), K.CC.2.5		
3	Classifying and counting objects	K.CC.2.5	K.MD.2.3	K.G.1.1
4	Understanding and representing addition within 5	K.CC.2.4 (c), K.OA.1.1		
5	Identifying and describing shapes		K.G.2.5	K.G.1.1, K.G.1.2
6	Adding and subtracting within 5	K.OA.1.1, K.OA.1.2, K.OA.1.a		
7	Rote counting to 50 and representing up to 20 objects	K.CC.1.1, K.CC.1.2, K.CC.1.3, K.CC.2.4 (b), K.CC.2.5		
8	Describing and comparing measurable attributes			K.MD.1.1, K.MD.1.2
9	Comparing numbers	K.CC.3.6, K.CC.3.7		
10	Understanding addition and subtraction within 10	K.OA.1.1, K.OA.1.2, K.OA.1.a		
11	Classifying two- and three-dimensional shapes		K.MD.2.3, K.G.2.4	K.G.1.3
12	Composing ten	K.OA.1.4		
13	Counting to 100 by ones and tens	K.CC.1.1, K.CC.1.2		
14	Developing foundations of place value	K.NBT.1.1		
15	Modeling and composing shapes		K.G.2.5, K.G.2.6	
16	Measuring lengths with non-standard units			K.MD.1.a
17	Solving problems and demonstrating fluency within 5	K.OA.1.2, K.OA.1.5		

Standards for Mathematical Practice

Kindergarten students will:

1. **Make sense of problems and persevere in solving them. (SMP.1)**
   Mathematically proficient students in Kindergarten examine problems (tasks), can make sense of the meaning of the task and find an entry point or a way to start the task. Kindergarten students also begin to develop a foundation for problem solving strategies and become independently proficient on using those strategies to solve new tasks. In Kindergarten, students' work focuses on concrete manipulatives before moving to pictorial representations. Kindergarten 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, at the end of a task mathematically proficient students ask themselves the question, "Does my answer make sense?"

2. **Reason abstractly and quantitatively. (SMP.2)**
   Mathematically proficient students in Kindergarten make sense of quantities and the relationships while solving tasks. This involves two processes- decontexualizing and contextualizing. In Kindergarten, students represent situations by decontextualizing tasks into numbers and symbols. For example, in the task, "There are 7 children on the playground and some children go line up. If there are 4 children still playing, how many children lined up?" Kindergarten students are expected to translate that situation into the equation: 7-4 = ___, and then solve the task. Students also contextualize situations during the problem solving process. For example, while solving the task above, students refer to the context of the task to determine that they need to subtract 4 since the number of children on the playground is the total number of students except for the 4 that are still playing. Abstract reasoning also occurs when students measure and compare the lengths of objects.

3. **Construct viable arguments and critique the reasoning of others. (SMP.3)**
   Mathematically proficient students in Kindergarten accurately use mathematical terms to construct arguments and engage in discussions about problem solving strategies. For example, while solving the task, "There are 8 books on the shelf. If you take some books off the shelf and there are now 3 left, how many books did you take off the shelf?" students will solve the task, and then be able to construct an accurate argument about why they subtracted 3 form 8 rather than adding 8 and 3. Further, Kindergarten students are expected to examine a variety of problem solving strategies and begin to recognize the reasonableness of them, as well as similarities and differences among them.

4. **Model with mathematics. (SMP.4)**
   Mathematically proficient students in Kindergarten 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. Kindergarten students rely on concrete manipulatives and pictorial representations while solving tasks, but the expectation is that they will also write an equation to model problem situations. For example, while solving the task "there are 7 bananas on the counter. If you eat 3 bananas, how many are left?" Kindergarten students are expected to write the equation 7-3 = 4. Likewise, Kindergarten students are expected to create an appropriate problem situation from an equation. For example, students are expected to orally tell a story problem for the equation 4+5 = 9.

5. **Use appropriate tools strategically. (SMP.5)**
   Mathematically proficient students in Kindergarten have access to and use tools appropriately. These tools may include counters, place value (base ten) blocks, hundreds number boards, number lines, and concrete geometric shapes. Students should also have experiences with technologies, such as calculators, virtual manipulatives, and mathematical games that support conceptual understanding. During classroom instruction, students should have access to various mathematical tools as well as paper, and determine which tools are the most appropriate to use. For example, while solving the task "There are 4 dogs in the park. If 3 more dogs show up, how many dogs are they?" Kindergarten students are expected to explain why they used specific mathematical tools."

6. **Attend to precision. (SMP.6)**
   Mathematically proficient students in Kindergarten are precise in their communication, calculations, and measurements. In all mathematical tasks, students describe their actions and strategies 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 objects iteratively (repetitively), students check to make sure that there are no gaps or overlaps. During tasks involving number sense, students check their work to ensure the accuracy and reasonableness.

7. **Look for and make use of structure. (SMP.7)**
   Mathematically proficient students in Kindergarten carefully look for patterns and structures in the number system and other areas of mathematics. While solving addition problems, students begin to recognize the commutative property, in that 1+4 = 5, and 4+1 = 5. While decomposing teen numbers, students realize that every number between 11 and 19, can be decomposed into 10 and some leftovers, such as 12 = 10+2, 13 = 10+3, etc. Further, Kindergarten students make use of structures of mathematical tasks when they begin to work with subtraction as missing addend problems, such as 5- 1 = __ can be written as 1+ __ = 5 and can be thought of as how much more do I need to add to 1 to get to 5?

8. **Look for and express regularity in repeated reasoning. (SMP.8)**
   Mathematically proficient students in Kindergarten begin to look for regularity in problem structures when solving mathematical tasks. Likewise, students begin composing and decomposing numbers in different ways. For example, in the task "There are 8 crayons in the box. Some are red and some are blue. How many of each could there be?" Kindergarten students are expected to realize that the 8 crayons could include 4 of each color (4+4 = 8), 5 of one color and 3 of another (5+3 = 8), etc.

Common Addition and Subtraction Situations Table

	Result Unknown	Change Unknown	Start Unknown
Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? 2 + ? = 5	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? ? + 3 = 5
Take from	Five apples were on the table. I ate two apples. How many apples are on the table now? 5 – 2 = ?	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 - ? = 3	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ? – 2 = 3

	Total Unknown	Both Addends Unknown[1]	Addend Unknown[2]
Put Together/ Take Apart	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = ? + ? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 + 4 + 1 5 = 2 + 3, 5 = 3 + 2	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5 5 – 3 = ?

	Difference Unknown	Bigger Unknown	Smaller Unknown
Compare	*"How many more?" version:* Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? *"How many fewer?" version:* Lucy has two apples. Julie has five apples. How may fewer apples does Lucy have than Julie? 2 + ? = 5 5 – 2 = ?	*"More" version suggests operation:* Julie has 3 more apples than Lucy. Lucy has two apples. How many apples does Julie have? *"Fewer" version suggests wrong operation:* Lucy has three fewer apples than Julie. Lucy has two apples. How many apples does Julie have? 2 + 3 = ? 3 + 2 = ?	*"Fewer" version suggests operation:* Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have? *"More" version suggests wrong operation:* Lucy has three fewer apples than Julie. Julie has five apples. How many apples does Lucy have? 5 – 3 = ? ? + 3 = 5

Darker shading indicates the four Kindergarten problem subtypes. Grade 1 and 2 students work with all subtypes and variants. Unshaded (white) problems are the four difficult subtypes or variants that students should work with in Grade 1 but need not master until Grade 2. Adapted from CCSS, p. 88, which is based on Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity, National Research Council, 2009, pp. 32–33.

[1] This can be used to show all decompositions of a given number, especially important for numbers within 10. Equations with totals on the left help children understand that = does not always mean "makes" or "results in" but always means "is the same number as." Such problems are not a problem subtype with one unknown, as is the Addend Unknown subtype to the right. These problems are a productive variation with two unknowns that give experience with finding all the decompositions of a number and reflecting on the patterns involved.

[2] Either addend can be unknown; both variations should be included.