Suggested Instructional Timeline: Quarter 1	
Unit 1	9/6/16 – 10/14/16 (6 WEEKS)
Unit 2	10/17/16 – 11/3/16 (3 WEEKS)

Kindergarten Mathematics	**Quarter 1 – Unit 1**
Common Core Domains and Clusters:	**Counting & Cardinality (CC)** - Know number names and the count sequence - Count to tell the number of objects **Operations & Algebraic Thinking (OA)** - Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **Measurement & Data (MD)** - Classify objects and count the number of objects in each category
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:** **SMP 1** – Making sense of problems and persevere in solving them ***** **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others ***** **SMP 4** – Model with Mathematics **SMP 5** – Use appropriate tools strategically **SMP 6** – Attend to precision ***** **SMP 7** –Look for and make use of structure **SMP8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		Skill Focus: Students will understand how to...
WEEKS ONE – SIX (9/6/16 – 10/14/16)		
K.CC.3	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).	• **Analyze to find two objects that are *exactly the same* or *not exactly the same.*** • **Analyze to find two similar objects—*these are the same but….*** • **Classify to find two objects that share a visual pattern, color, and use.** • **Classify items into two pre-determined categories.** • **Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.** • **Sort categories by count. Identify categories with two, three, and four within a given scenario.** • **Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.** • **Answer how many questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count 5 fingers.** • **Within linear and array dot configurations of numbers 3, 4, and 5 find hidden partners.** • **Within circular and scattered dot configurations of numbers 3, 4, and 5 find hidden partners.** • **Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1** • **Understand the meaning of zero. Write the numeral 0.** • **Order and write numerals 0–3 to answer how many**
K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.	
K.CC.4a	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.	
K.CC.4b	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.	
K.CC.4c	Understand that each successive number name refers to a quantity that is one larger.	
K.CC.5	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	
K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	
K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	

		questions. • **Writer numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.** • **Order and write numerals 4 and 5 to answer how many questions in categories; sort by count.** • **Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.** • **Count 4–6 objects in vertical and horizontal linear configurations and array (i.e., 3 and 3, 3 twos) configurations. Match 6 objects to the numeral 6.** • **Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Writer numerals 1–6 in order.** • **Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7 and connect to 5-group images.** • **Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group dot mat. Match with numeral 9.** • **Count 10 objects in linear and array configurations (5 and 5). Match with numeral 10. Place on the 5-group dot mat. Dialogue about 9 and 10 on the mat. Write numeral 10.** • **Count 10 objects and move between all configurations.** • **Act out result unknown story problems without equations.**

Unpacking: What do these standards mean a child will know and be able to do?	
K.CC.3	Students write the numerals 0-20 and use the written numerals 0-20 to represent the amount within a set. For example, if the student has counted 9 objects, then the written numeral "9" is recorded. Students can record the quantity of a set by selecting a number card/tile (numeral recognition) or writing the numeral. Students can also create a set of objects based on the numeral presented. For example, if a student picks up the number card "13", the student then creates a pile of 13 counters. While children may experiment with writing numbers beyond 20, this standard places emphasis on numbers 0-20.
K.CC.4	Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects. The expectation is that students are comfortable with these skills with the numbers 1-20 by the end of Kindergarten
K.CC.4a	Students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence), using one counting word for every object (synchrony/ one-to-one tagging), while keeping track of objects that have and have not been counted. This is the foundation of counting.
K.CC.4b	Students answer the question "How many are there?" by counting objects in a set and understanding that the last number stated when counting a set (…8, 9, 10) represents the total amount of objects: "There are 10 bears in this pile." (cardinality). Since an important goal for children is to count with meaning, it is important to have children answer the question, "How many do you have?" after they count. Often times, children who have not developed cardinality will count the amount again, not realizing that the 10 they stated means 10 objects in all.
K.CC.4c	Another important milestone in counting is inclusion (hierarchal inclusion). Inclusion is based on the understanding that numbers build by exactly one each time and that they nest within each other by this amount. For example, a set of three objects is nested within a set of 4 objects; within this same set of 4 objects is also a set of two objects and a set of one. Using this understanding, if a student has four objects and wants to have 5 objects, the student is able to add one more- knowing that four is within, or a sub-part of, 5 (rather than removing all 4 objects and starting over to make a new set of 5). This concept is critical for the later development of part/whole relationships.
K.CC.5	In order to answer "how many?" students need to keep track of objects when counting. Keeping track is a method of counting that is used to count each item once and only once when determining how many. After numerous experiences with counting objects, along with the developmental understanding that a group of objects counted multiple times will remain the same amount, students recognize the need for keeping track in order to accurately determine "how many". Depending on the amount of objects to be counted, and the students' confidence with counting a set of objects, students may move the objects as they count each, point to each object as counted, look without touching when counting, or use a combination of these strategies. It is important that children develop a strategy that makes sense to them based on the realization that keeping track is important in order to get an accurate count, as opposed to following a rule, such as "Line them all up before you count", in order to get the right answer.

K.OA.3	Students develop an understanding of part-whole relationships as they recognize that a set of objects (5) can be broken into smaller sub-sets (3 and 2) and still remain the total amount (5). In addition, this objective asks students to realize that a set of objects (5) can be broken in multiple ways (3 and 2; 4 and 1). Thus, when breaking apart a set (decompose), students use the understanding that a smaller set of objects exists within that larger set (inclusion). In Kindergarten, students need ample experiences breaking apart numbers and using the vocabulary "and" &"same amount as" before symbols (+, =) and equations (5= 3 + 2) are introduced. If equations are used, a mathematical representation (picture, objects) needs to be present as well.
K.MD.3	Students identify similarities and differences between objects (e.g., size, color, shape) and use the identified attributes to sort a collection of objects. Once the objects are sorted, the student counts the amount in each set. Once each set is counted, then the student is asked to sort (or group) each of the sets by the amount in each set. Thus, like amounts are grouped together, but not necessarily ordered. For example, when exploring a collection of buttons: First, the student separates the buttons into different piles based on color (all the blue buttons are in one pile, all the orange buttons are in a different pile, etc.). Then the student counts the number of buttons in each pile: blue (5), green (4), orange (3), purple (4). Finally, the student organizes the groups by the quantity. "I put the purple buttons next to the green buttons because purple also had (4). Blue has 5 and orange has 3. There aren't any other colors that have 5 or 3. So they are sitting by themselves." This objective helps to build a foundation for data collection in future grades as they create and analyze various graphical representations.

Kindergarten Mathematics	**Quarter 1 – Unit 2**
Common Core Domains and Clusters:	**Measurement & Data (MD)** - Classify objects and count the number of objects in each category. **Geometry (G)** - Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). - Analyze, compare, create, and compose shapes.
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:** **SMP 1** – Making sense of problems and persevere in solving them ***** **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others ***** **SMP 4** – Model with Mathematics

	SMP 5 – Use appropriate tools strategically **SMP 6** – Attend to precision ***** **SMP 7** –Look for and make use of structure **SMP8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		**Skill Focus: Students will understand how to...**
WEEKS SEVEN – NINE (10/17/16 – 11/3/16)		
K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	• **Find and describe flat triangles, squares, rectangles, hexagons, and circles using informal language without naming** • **Explain decisions about classifications of triangles into categories using variants and non-examples. Identify shapes as triangles.** • **Explain decisions about classifications of rectangles into categories using variants and non-examples. Identify shapes as rectangles.** • **Explain decisions about classifications of hexagons and circles and identify them by name. Make observations using variants and non-examples.** • **Describe and communicate positions of all flat shapes using the words *above, below, beside, in front of, next to,* and *behind.*** • **Find and describe solid shapes using informal language without naming.** • **Explain decisions about classification of solid shapes into categories. Name the solid shapes.**
K.G.1	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.	
K.G.2	Correctly name shapes regardless of their orientations or overall size.	
K.G.3	Identify shapes as two dimensional (lying in a plane, "flat") or three dimensional ("solid").	
K.G.4	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).	

		• **Describe and communicate positions of all solid shapes using the words *above, below, beside, in front of, next to,* and *behind.*** • **Identify and sort shapes as two-dimensional or three-dimensional and recognize two-dimensional and three-dimensional shapes in different orientations and sizes.**
Unpacking: What do these standards mean a child will know and be able to do?		
K.MD.3	Students identify similarities and differences between objects (e.g., size, color, shape) and use the identified attributes to sort a collection of objects. Once the objects are sorted, the student counts the amount in each set. Once each set is counted, then the student is asked to sort (or group) each of the sets by the amount in each set. Thus, like amounts are grouped together, but not necessarily ordered. For example, when exploring a collection of buttons: First, the student separates the buttons into different piles based on color (all the blue buttons are in one pile, all the orange buttons are in a different pile, etc.). Then the student counts the number of buttons in each pile: blue (5), green (4), orange (3), purple (4). Finally, the student organizes the groups by the quantity. "I put the purple buttons next to the green buttons because purple also had (4). Blue has 5 and orange has 3. There aren't any other colors that have 5 or 3. So they are sitting by themselves." This objective helps to build a foundation for data collection in future grades as they create and analyze various graphical representations.	
K.G.1	Students locate and identify shapes in their environment. For example, a student may look at the tile pattern arrangement on the hall floor and say, "Look! I see squares! They are next to the triangle." At first students may use informal names e.g., "balls," "boxes," "cans". Eventually students refine their informal language by learning mathematical concepts and vocabulary and identify, compare, and sort shapes based on geometric attributes. Students also use positional words (such as those italicized in the standard) to describe objects in the environment, developing their spatial reasoning competencies. Kindergarten students need numerous experiences identifying the location and position of actual two-and-three-dimensional objects in their classroom/school prior to describing location and position of two-and-three-dimension representations on paper.	
K.G.2	Through numerous experiences exploring and discussing shapes, students begin to understand that certain attributes define what a shape is called (number of sides, number of angles, etc.) and that other attributes do not(color, size, orientation). As the teacher facilitates discussions about shapes ("Is it still a triangle if I turn it like this?"), children question what they "see" and begin to focus on the geometric attributes. Kindergarten students typically do not yet recognize triangles that are turned upside down as triangles, since they don't "look like" triangles. Students need ample experiences manipulating shapes and looking at shapes with various typical and atypical orientations. Through these experiences, students will begin to move beyond what a shape "looks like" to identifying particular geometric attributes that define a shape.	

K.G.3	Students identify objects as flat (2 dimensional) or solid (3 dimensional). As the teacher embeds the vocabulary into students' exploration of various shapes, students use the terms two-dimensional and three-dimensional as they discuss the properties of various shapes.
K.G.4	Students relate one shape to another as they note similarities and differences between and among 2-D and 3-D shapes using informal language. For example, when comparing a triangle and a square, they note that they both are closed figures, have straight sides, but the triangle has 3 sides while the square has 4. Or, when building in the Block Center, they notice that the faces on the cube are all square shapes. Kindergarteners also distinguish between the most typical examples of a shape from obvious non-examples. For example: When identifying the triangles from a collection of shapes, a student circles all of the triangle examples from the non-examples.

Suggested Instructional Timeline: Quarter 2	
Unit 1	11/7/16 – 2/2/17 (10 WEEKS)

Kindergarten Mathematics	**Quarter 2 – Unit 1**
Common Core Domains and Clusters:	**Counting & Cardinality (CC)** - Compare numbers. **Measurement & Data (MD)** - Describe and compare measurable attributes.
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:** **SMP 1** – Making sense of problems and persevere in solving them ***** **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others ***** **SMP 4** – Model with Mathematics **SMP 5** – Use appropriate tools strategically **SMP 6** – Attend to precision ***** **SMP 7** –Look for and make use of structure **SMP8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		**Skill Focus: Students will understand how to...**
WEEKS ONE – TEN (11/7/16 – 2/2/17)		
K.CC. 6	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.	• **Compare lengths using *taller than* and *shorter than* with aligned and non-aligned endpoints.**

K.CC.7	Compare two numbers between 1 and 20 presented as written numerals.	• **Compare length measurements with string.** • **Make series of *longer than* and *shorter than* comparisons.** • **Compare the length of linking cube sticks to a 5-stick.** • **Determine which linking cube stick is taller than or shorter than the other.** • **Compare the length of linking cube sticks to various objects.** • **Compare objects using the same as.** • **Compare using heavier than and lighter than with classroom objects.** • **Compare objects using heavier than, lighter than, and the same as with balance scales.** • **Compare the weight of an object to a set of unit weights on a balance scale.** • **Compare the weight of an object with sets of different objects on a balance scale.** • **Compare volume using more than, less than, and the same as by pouring.** • **Compare using the same as with units.** • **Make informal comparison of area.** • **Compare to find if there is enough.** • **Compare using more than and the same as.** • **Compare using fewer than and the same as.** • **Relate more and less to length.** • **Compare sets informally using more, less, and fewer.** • **Identify and create a set that has the same number of objects.** • **Reason to identify and make a set that has 1 more.** • **Reason to identify and make a set that has 1 less.**
K.MD.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	
K.MD.2	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.	

		• **Match and count to compare a number of objects. State which quantity is more.** • **Match and count to compare two sets of objects. State which quantity is less.** • **Strategize to compare two sets.** • **Visualize quantities to compare two numerals.**
Unpacking: What do these standards mean a child will know and be able to do?		
K.CC. 6	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.	
K.CC.7	Compare two numbers between 1 and 20 presented as written numerals.	
K.MD.1	Students describe measurable attributes of objects, such as length, weight, size, and color. For example, a student may describe a shoe with one attribute, "Look! My shoe is blue, too!", or more than one attribute, "This shoe is heavy! It's also really long." Students often initially hold non-differentiated views of measurable attributes, saying that one object is "bigger" than another whether it is longer, or greater in area, or greater in volume, and so forth. For example, two students might both claim their block building is "the biggest." Conversations about how they are comparing- one building may be taller (greater in length) and another may have a larger base (greater in area)- help students learn to discriminate and name these measureable attributes. As they discuss these situations and compare objects using different attributes, they learn to distinguish, label, and describe several measureable attributes of a single object. Thus, teachers listen for and extend conversations about things that are "big", or "small," as well as "long," "tall," or "high," and name, discuss, and demonstrate with gestures the attribute being discussed.	
K.MD.2	Direct comparisons are made when objects are put next to each other, such as two children, two books, two pencils. For example, a student may line up two blocks and say, "The blue block is a lot longer than the white one." Students are not comparing objects that cannot be moved and lined up next to each other. Similar to the development of the understanding that keeping track is important to obtain an accurate count, kindergarten students need ample experiences with comparing objects in order to discover the importance of lining up the ends of objects in order to have an accurate measurement. As this concept develops, children move from the idea that "Sometimes this block is longer than this one and sometimes it's shorter (depending on how I lay them side by side) and that's okay". "This block is always longer than this block (with each end lined up appropriately)." Since this understanding requires conservation of length, a developmental milestone for young children, kindergarteners need multiple experiences measuring a variety of items and discussing findings with one another. As students develop conservation of length, learning and using language such as "It looks longer, but it really isn't longer" is helpful.	

Suggested Instructional Timeline: Quarter 3	
Unit 1	2/6/17 – 4/6/17 (9 WEEKS)

Kindergarten Mathematics	**Quarter 3 – Unit 1**
Common Core Domains and Clusters:	**Operations & Algebraic Thinking (OA)** - Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:** **SMP 1** – Making sense of problems and persevere in solving them ***** **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others ***** **SMP 4** – Model with Mathematics **SMP 5** – Use appropriate tools strategically **SMP 6** – Attend to precision ***** **SMP 7** –Look for and make use of structure **SMP 8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		**Skill Focus: Students will understand how to...**
WEEKS ONE – NINE (2/6/17 – 4/6/17)		
K.OA.1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Drawings need not show details, but should show the mathematics in the problem. This	• **Model composition and decomposition of numbers to 5 using actions, objects, and drawings.** • **Model composition and decomposition of numbers to**

	applies wherever drawings are mentioned in the Standards.)	**5 using fingers and linking cube sticks.** • **Represent composition story situations with drawings using numeric number bonds.** • **Represent decomposition story situations with drawings using numeric number bonds.** • **Represent composition and decomposition of numbers to 5 using pictorial and numeric number bonds.** • **Represent number bonds with composition and decomposition story situations.** • **Model decompositions of 6 using a story situation, objects, and number bonds.** • **Model decompositions of 7 using a story situation, sets, and number bonds.** • **Model decompositions of 8 using a story situation, arrays, and number bonds.** • **Model decompositions of 6–8 using linking cube sticks to see patterns.** • **Represent decompositions for 6–8 using horizontal and vertical number bonds.** • **Represent decomposition and composition addition stories to 6 with drawings and equations with no unknown.** • **Represent decomposition and composition addition stories to 7 with drawings and equations with no unknown.** • **Represent decomposition and composition addition stories to 8 with drawings and equations with no unknown.** • **Solve add to with result unknown word problems to 8**
K.OA.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	
K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	
K.OA.4	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.	
K.OA.5	Fluently add and subtract within 5. ***(KDG Fluency Standard)***	

		with equations. Box the unknown. • **Solve put together with total unknown word problems to 8 using objects and drawings.** • **Solve both addends unknown word problems to 8 to find addition patterns in number pairs.** • **Use objects and drawings to find how many are left.** • **Solve take from with result unknown expressions and equations using the minus sign with no unknown.** • **Represent subtraction story problems using objects, drawings, expressions, and equations.** • **Model decompositions of 9 using a story situation, objects, and number bonds.** • **Model decompositions of 9 using fingers, linking cubes, and number bonds.** • **Model decompositions of 10 using a story situation, objects, and number bonds.** • **Model decompositions of 10 using fingers, sets, linking cubes, and number bonds.** • **Solve take from equations with no unknown using numbers to 10.** • **Represent subtraction story problems by breaking off, crossing out, and hiding a part.** • **Add or subtract 0 to get the same number and relate to word problems wherein the same quantity that joins a set, separates.** • **Find the number that makes 10 for numbers 1–9, and record each with an addition equation.**
Unpacking: What do these standards mean a child will know and be able to do?		
K.OA.1	Students demonstrate the understanding of how objects can be joined (addition) and separated (subtraction) by representing addition and subtraction situations in various ways. This objective is focused on understanding the concept of addition and subtraction, rather than	

	reading and solving addition and subtraction number sentences (equations). Common Core State Standards for Mathematics states, "Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required." Please note that it is not until First Grade when "Understand the meaning of the equal sign" is an expectation (1.OA.7). Therefore, before introducing symbols (+, -, =) and equations, kindergarteners require numerous experiences using joining (addition) and separating (subtraction) vocabulary in order to attach meaning to the various symbols. For example, when explaining a solution, kindergartens may state, "Three and two is the same amount as 5." While the meaning of the equal sign is not introduced as a standard until First Grade, if equations are going to be modeled and used in Kindergarten, students must connect the symbol (=) with its meaning (is the same amount/quantity as).
K.OA.2	Kindergarten students solve four types of problems within 10: Result Unknown/Add To; Result Unknown/Take From; Total Unknown/Put Together-Take Apart; and Addend Unknown/Put Together-Take Apart Kindergarteners use counting to solve the four problem types by acting out the situation and/or with objects, fingers, and drawings. Example: Nine grapes were in the bowl. I ate 3 grapes. How many grapes are in the bowl now? Student: I got 9 "grapes" and put them in my bowl. Then, I took 3 grapes out of the bowl. I counted the grapes still left in the bowl… 1, 2, 3, 4, 4, 5, 6. Six. There are 6 grapes in the bowl. Example: Six crayons are in the box. Two are red and the rest are blue. How many blue crayons are in the box? Student: I got 6 crayons. I moved these two over and pretended they were red. Then, I counted the "blue" ones… 1, 2, 3, 4. Four. There are 4 blue crayons.
K.OA.3	Students develop an understanding of part-whole relationships as they recognize that a set of objects (5) can be broken into smaller sub-sets (3 and 2) and still remain the total amount (5). In addition, this objective asks students to realize that a set of objects (5) can be broken in multiple ways (3 and 2; 4 and 1). Thus, when breaking apart a set (decompose), students use the understanding that a smaller set of objects exists within that larger set (inclusion). In Kindergarten, students need ample experiences breaking apart numbers and using the vocabulary "and" &"same amount as" before symbols (+, =) and equations (5= 3 + 2) are introduced. If equations are used, a mathematical representation (picture, objects) needs to be present as well.
K.OA.4	Students build upon the understanding that a number (less than or equal to 10) can be decomposed into parts (K.OA.3) to find a missing part of 10. Through numerous concrete experiences, kindergarteners model the various sub-parts of ten and find the missing part of 10. In addition, kindergarteners use various materials to solve tasks that involve decomposing and composing 10.
K.OA.5	Students are fluent when they display accuracy (correct answer), efficiency (a reasonable amount of steps in about 3-5 seconds without resorting to counting), and flexibility (using strategies such as the distributive property). Students develop fluency by understanding and internalizing the relationships that exist between and among numbers. Often times, when children think of each "fact" as an individual item that does not relate to any other "fact", they are attempting to memorize separate bits of information that can be easily forgotten. Instead, in order to fluently add and subtract, children must first be able to see sub-parts within a number

Suggested Instructional Timeline: Quarter 4	
Unit 1	4/17/17 – 5/19/17 (5 WEEKS)
Unit 2	5/22/17 – 6/16/17 (4 WEEKS)

Kindergarten Mathematics	**Quarter 4 – Unit 1**
Common Core Domains and Clusters:	**Counting & Cardinality (CC)** - Know number names and the count sequence. - Count to tell the number of objects. **Numbers & Operations in Base Ten (NBT)** - Work with numbers 11–19 to gain foundations for place value.
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:** **SMP 1** – Making sense of problems and persevere in solving them ***** **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others ***** **SMP 4** – Model with Mathematics **SMP 5** – Use appropriate tools strategically **SMP 6** – Attend to precision ***** **SMP 7** –Look for and make use of structure **SMP8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		**Skill Focus: Students will understand how to...**
WEEKS ONE – FIVE (4/17/17 – 5/19/17)		
K.CC.1	Count to 100 by ones and by tens.	• **Count 10 objects within counts of 10 to 20 objects, and**

K.CC.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	**describe as 10 ones and ___ ones.** • **Count and circle 10 objects within images of 10 to 20 objects, and describe as 10 ones and ___ ones.** • **Model with objects and represent numbers 10 to 20 with place value cards.** • **Model and write numbers 10 to 20 as number bonds.** • **Model teen numbers with materials from abstract to concrete.** • **Draw teen numbers from abstract to pictorial.** • **Show, count, and write numbers 11 to 20 in tower configurations increasing by 1—a pattern of 1 larger.** • **Represent numbers 20 to 11 in tower configurations decreasing by 1—a pattern of 1 smaller.** • **Show, count, and write to answer how many questions in linear and array configurations** • **Show, count, and write to answer how many questions with up to 20 objects in circular configurations.** • **Count up and down by tens to 100 with regular counting.** • **Count within tens by ones.** • **Count across tens when counting by ones through 40.** • **Count across tens by ones to 100 with and without objects.** • **Represent teen number compositions and decompositions as addition sentences.** • **Represent teen number decompositions as 10 ones and some ones and find a hidden part.** • **Decompose teen numbers as 10 ones and some ones; compare some ones to compare the teen numbers.** • **Reason about and represent situations, decomposing**
K.CC.3	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).	
K.CC.4	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. c. Understand that each successive number name refers to a quantity that is one larger.	
K.CC.5	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.	
K.NBT.1	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.	

		teen numbers into 10 ones and some ones and composing 10 ones and some ones into a teen number.
Unpacking: What do these standards mean a child will know and be able to do?		
K.CC.1	Students begin to rote count by starting at one and counting to 100. When students count by tens they are only expected to master counting on the decade (0, 10, 20, 30, 40 …). This objective does not require recognition of numerals. It is focused on the rote number sequence.	
K.CC.2	Students begin a rote forward counting sequence from a number other than 1. Thus, given the number 4, the student would count, "4, 5, 6, 7 …" This objective does not require recognition of numerals. It is focused on the rote number sequence 0-100.	
K.CC.3	Students write the numerals 0-20 and use the written numerals 0-20 to represent the amount within a set. For example, if the student has counted 9 objects, then the written numeral "9" is recorded. Students can record the quantity of a set by selecting a number card/tile (numeral recognition) or writing the numeral. Students can also create a set of objects based on the numeral presented. For example, if a student picks up the number card "13", the student then creates a pile of 13 counters. While children may experiment with writing numbers beyond 20, this standard places emphasis on numbers 0-20.	
K.CC.4	Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects. The expectation is that students are comfortable with these skills with the numbers 1-20 by the end of Kindergarten. Students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence), using one counting word for every object (synchrony/ one-to-one tagging), while keeping track of objects that have and have not been counted. This is the foundation of counting. Students answer the question "How many are there?" by counting objects in a set and understanding that the last number stated when counting a set (…8, 9, 10) represents the total amount of objects: "There are 10 bears in this pile." (cardinality). Since an important goal for children is to count with meaning, it is important to have children answer the question, "How many do you have?" after they count. Often times, children who have not developed cardinality will count the amount again, not realizing that the 10 they stated means 10 objects in all. Another important milestone in counting is inclusion (hierarchal inclusion). Inclusion is based on the understanding that numbers build by exactly one each time and that they nest within each other by this amount. For example, a set of three objects is nested within a set of 4 objects; within this same set of 4 objects is also a set of two objects and a set of one. Using this understanding, if a student has four objects and wants to have 5 objects, the student is able to add one more- knowing that four is within, or a sub-part of, 5 (rather than removing all 4 objects and starting over to make a new set of 5). This concept is critical for the later development of part/whole relationships.	
K.CC.5	In order to answer "how many?" students need to keep track of objects when counting. Keeping track is a method of counting that is used to count each item once and only once when determining how many. After numerous experiences with counting objects, along with the developmental understanding that a group of objects counted multiple times will remain the same amount, students	

	recognize the need for keeping track in order to accurately determine "how many". Depending on the amount of objects to be counted, and the students' confidence with counting a set of objects, students may move the objects as they count each, point to each object as counted, look without touching when counting, or use a combination of these strategies. It is important that children develop a strategy that makes sense to them based on the realization that keeping track is important in order to get an accurate count, as opposed to following a rule, such as "Line them all up before you count", in order to get the right answer.
K.NBT.1	Students explore numbers 11-19 using representations, such as manipulatives or drawings. Keeping each count as a single unit, kindergarteners use 10 objects to represent "10" rather than creating a unit called a ten (unitizing) as indicated in the First Grade CCSS standard 1.NBT.1a: 10 can be thought of as a bundle of ten ones — called a "ten." <u>Example:</u> Teacher: "I have some chips here. Do you think they will fit on our ten frame? Why? Why Not?" Students: Share thoughts with one another. Teacher: "Use your ten frame to investigate." Students: "Look. There's too many to fit on the ten frame. Only ten chips will fit on it." Teacher: "So you have some leftovers?" Students: "Yes. I'll put them over here next to the ten frame." Teacher: "So, how many do you have in all?" Student A: "One, two, three, four, five… ten, eleven, twelve, thirteen, fourteen. I have fourteen. Ten fit on and four didn't." Student B: Pointing to the ten frame, "See them- that's 10… 11, 12, 13, 14. There's fourteen." Teacher: Use your recording sheet (or number sentence cards) to show what you found out.

Kindergarten Mathematics	**Quarter 4 – Unit 1**
Common Core Domains and Clusters:	**Counting & Cardinality (CC)** - Count to tell the number of objects. **Geometry (G)** - Analyze, compare, create, and compose shapes.
Standards for Mathematical Practice (SMP):	**The following highlighted practices are the minimally required practices students must demonstrate throughout the instructional unit:**

	SMP 1 – Making sense of problems and persevere in solving them * **SMP 2** – Reason Abstractly and quantitatively **SMP 3** – Constructing viable arguments and critique the reasoning of others * **SMP 4** – Model with Mathematics **SMP 5** – Use appropriate tools strategically **SMP 6** – Attend to precision * **SMP 7** –Look for and make use of structure **SMP8** – Look for and express regularity in repeated reasoning *** The District's required SMPs**
Fluency Standard(s):	**Students must fluently demonstrate mastery within the following standard by the end of the year:** **K.OA.5 -** Fluently add and subtract within 5.

Common Core Standards		**Skill Focus: Students will understand how to...**
WEEKS SIX – NINE (5/22/17 – 6/16/17)		
K.CC.4	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.	• **Describe the systematic construction of flat shapes using ordinal numbers.** • **Build flat shapes with varying side lengths and record with drawings.** • **Compose solids using flat shapes as a foundation.** • **Describe the relative position of shapes using ordinal numbers.** • **Compose flat shapes using pattern blocks and drawings.** • **Decompose flat shapes into two or more shapes.** • **Compose simple shapes to form a larger shape described by an outline.**
K.G.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	
K.G.6	Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	
Unpacking: What do these standards mean a child will know and be able to do?		
K.CC.4	Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects. The expectation is that	

	students are comfortable with these skills with the numbers 1-20 by the end of Kindergarten.
K.G.5	Students apply their understanding of geometric attributes of shapes in order to create given shapes. For example, students may roll a clump of play-doh into a sphere or use their finger to draw a triangle in the sand table, recalling various attributes in order to create that particular shape. Another important milestone in counting is inclusion (hierarchal inclusion). Inclusion is based on the understanding that numbers build by exactly one each time and that they nest within each other by this amount. For example, a set of three objects is nested within a set of 4 objects; within this same set of 4 objects is also a set of two objects and a set of one. Using this understanding, if a student has four objects and wants to have 5objects, the student is able to add one more- knowing that four is within, or a sub-part of, 5 (rather than removing all 4 objects and starting over to make a new set of 5). This concept is critical for the later development of part/whole relationships
K.G.6	This standard moves beyond identifying and classifying simple shapes to manipulating two or more shapes to create a new shape. This concept begins to develop as students move, rotate, flip, and arrange puzzle pieces to complete a puzzle. Kindergarteners use their experiences with puzzles to use simple shapes to create different shapes. For example, when using basic shapes to create a picture, a student flips and turns triangles to make a rectangular house. Students also combine shapes to build pictures. They first use trial and error (part a) and gradually consider components (part b).