

Grade: Kindergarten	Unit Name: Unit 1: Classify and Count Number to 5	Duration: 10 Days/2weeks
Essential Questions: <ul style="list-style-type: none"> • How are numbers used to quantify, compare, represent, and model quantities? • How can numbers support communication? 		Real World Problems/Applications: <ul style="list-style-type: none"> • Count fingers (body parts) • Count to complete daily attendance routines • Write days on the calendar • Write their own age on a birthday cake • Determine who has more/less snack • Represent quantities in a recipe • Divide a stem of flowers into two vases
Standards/Eligible Content (Skills): CC.2.1.K.A.1 Know number names and write and recite the count sequence CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities CC.2.1.K.B.1 Use place value to compose and decompose numbers within 19 CC.2.4.K.A.4 Classify objects and count the number of objects in each category		Standards Reinforced: N/A
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Begin to recognize that a number represent a specific quantity. • Connect the quantity to the written symbol. • Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning). • Construct arguments using concrete representations such as objects, pictures, drawings, and actions. • Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. • Group like objects based on attributes • Compare two representations side-by-side 		
Reading/Writing/Listening/Speaking Skills:		

- Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like, “How did you get that?” and “Why is that true?”
- Begin to develop their clear and precise mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?”
- Explain their thinking to others and respond to others’ thinking.

Fluency:

- Recognize numbers 0-5
- Produce numerals correctly 0-5
- Recite number sequence 0-5

Vocabulary:

equal
greater than
less than
ones
quantity
total

Technology/Manipulatives/Resources:

- five frame
- counting bears
- beans
- blocks
- beads
- classroom objects
- number cards
- missing number decks
- number lines

Authentic Performance Assessments:

Students will create a Hi-Ho Cherry-O type game. In creating the game, students will gather five manipulatives, that have two different attributes, to be used to place on the five-frame to represent cumulative rolls. This task will demonstrate modeling quantities, allow like objects to be classified, and decomposing a number. Students will also create a dot die to demonstrate one to one correspondence. They will make a five frame with numerals to demonstrate count sequence and writing numbers.

Unit 1

Authentic Performance Assessment Task

- Students gather in small groups.
- Students are offered a choice between manipulatives (e.g. bears, blocks, etc.).
- Students gather a quantity of five from their chosen set of manipulatives.
- Students demonstrate how to find hidden pairs within their five manipulatives.
- Students sort manipulatives and explain how they sorted them (by which attribute).
- Students draw representations of quantities 0-5 on stickers and place stickers on cubes.
- Students are given a blank five-frame to fill out in counting sequence with numerals 1-5.
- Teacher models how to play the game.
 - Each partner rolls the dice.
 - Each partner represents the amount rolled with manipulatives on the five frame.
 - Both partners talk about how they built their numbers (what hidden pairs they had).
 - Both partners compare their numbers (greater than, less than, or equal to).

Rubric

Student Name:

Date:

Guiding Questions	1	2	3	4
Using the manipulatives, how can you show me a quantity?	<ul style="list-style-type: none"> Student shows little evidence of counting numerals, no understanding of one to one correspondence, and is almost non-responsive. 	<ul style="list-style-type: none"> Student inconsistently makes sets of cubes to represent the given number. Student is unable to identify groups and is unable to state a reason why she knows there are 5 or fewer objects. 	<ul style="list-style-type: none"> Student correctly counts and states the number of cubes with more time elapsed. Student is able to verbalize how she knows there are 5 or fewer objects but is unclear in her explanation. 	<p>Student correctly:</p> <ul style="list-style-type: none"> Counts the objects. Counts 5 or fewer objects and gives a reasonable answer to how she knows there are 5 or less (e.g., "I counted all of the cubes one at a time.>").
How can you classify the manipulatives?	<ul style="list-style-type: none"> Student shows little evidence of understanding how to classify items in a category. Student is beginning to form some numbers. 	<ul style="list-style-type: none"> Student shows evidence of beginning to understand classifying items in a category. 	<ul style="list-style-type: none"> Student correctly sorts the pictures into two clearly distinct categories but cannot provide a reasonable explanation of the categories or why the items belong. 	<p>Student correctly:</p> <ul style="list-style-type: none"> classifies items by attributes. justifies similarities by attribute (size, color, type, etc.).
How can smaller sets make a larger set?	<ul style="list-style-type: none"> Student shows little evidence of understanding zero or how to solve <i>put together with result unknown</i> problems. Numbers are illegible. 	<ul style="list-style-type: none"> Student shows an early understanding of how to solve <i>put together with result unknown</i> problems and demonstrates weak explanation skills with incomplete reasoning. Student has difficulty counting the sets. 	<ul style="list-style-type: none"> Student completes three of the four tasks. For example, student solves the <i>put together with result unknown</i> problem but cannot clearly explain his thinking. 	<p>Student correctly:</p> <ul style="list-style-type: none"> Solves the put together with result unknown problem using cubes. Explains his thinking, citing the solution process.
How can you label the die to quantify each number?	<ul style="list-style-type: none"> Student shows little evidence of understanding that a quantity represents a specific number. 	<ul style="list-style-type: none"> Student shows evidence of beginning to understand quantities represents a specific number but inconsistently 	<ul style="list-style-type: none"> Student most of the time correctly represents quantities 0-5 with dots. 	<ul style="list-style-type: none"> Student correctly represents quantities 0-5 with dots.

		represents a given number.		
How can you label the five-frame using numerals in the correct sequence?	<ul style="list-style-type: none"> • Student shows little evidence of understanding numeral writing and/or cannot complete most of the tasks. 	<ul style="list-style-type: none"> • Student shows evidence of beginning to understand numbers but may be out of order or may/may not say and write the numeral. 	<ul style="list-style-type: none"> • Student shows evidence of understand of count sequence and can write the numerals with some reversals. • Student writes four out of six numerals correctly, with a maximum of one reversal. 	<ul style="list-style-type: none"> • Student shows evidence of understand of count sequence and can write the numerals without reversals.
How can you represent the number you rolled on the die?	<ul style="list-style-type: none"> • Student shows little evidence of understanding organized counting, and matching concrete objects (dots) to the corresponding abstract numeral and/or cannot complete most of the tasks. 	<ul style="list-style-type: none"> • Student shows evidence of beginning to understand but miscounts. Student struggles with one-to-one correspondence. 	<ul style="list-style-type: none"> • Student correctly counts by touching each object and states the correct number of objects. 	<ul style="list-style-type: none"> • Student quickly and correctly subitizes and states the correct number of objects.
Comparing the two sets, how would you describe the quantity using more and less?	<ul style="list-style-type: none"> • Student shows little evidence of understanding more or is unable to complete the task. 	<ul style="list-style-type: none"> • Student shows evidence of beginning to understand that more is a greater number in the counting sequence and less is a fewer number in the counting sequence but requires support to recall and apply the concept. 	<ul style="list-style-type: none"> • Student accurately completes most of the tasks. For example, student identifies 5 as 1 more than 4, but is unable to identify 3 as 1 more than the numeral 2. 	<p>Student correctly:</p> <ul style="list-style-type: none"> ▪ Identifies the greater set such as 1 more than 4 is 5. ▪ Identifies the lesser set such as 1 less than 4 is 3.

Grade: Kindergarten	Unit Name: Unit 2 Identify and Describe Shapes	Duration: 10 Days/2 weeks
<p>Essential Questions:</p> <ul style="list-style-type: none"> • How can geometric properties be used to describe, model, and analyze situations? • How can recognizing repetition or regularity assist in solving problems more efficiently? 	<p>Real World Problems/Applications:</p> <ul style="list-style-type: none"> • Create a mat man using shapes • Put puzzles together • Identify and describe shape in the sky made of stars • Identify shapes in a house plan (blueprints) • Build a robot • Construct a community using 3 dimensional objects • Shape scavenger hunt 	
<p>Standards/Eligible Content (Skills): CC.2.3.K.A.1 Identify and describe and 2- and 3-dimensional shapes</p>	<p>Standards Reinforced:</p> <p>CC.2.1.K.A.1 Know number names and write and recite the count sequence</p> <p>CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects</p> <p>CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities</p>	
<p>Critical Thinking/Reasoning Skills:</p> <ul style="list-style-type: none"> • Develop their mathematical communication skills. • Use clear and precise language in their discussions with others and in their own reasoning. • Begin to discern a pattern or structure. • Identifying similarities and differences. 		
<p>Reading/Writing/Listening/Speaking Skills:</p> <ul style="list-style-type: none"> • Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like, “How do you know that is a triangle?” and “Why is that true?” • Explain their thinking to others and respond to others’ thinking. • Compare the two representations side-by-side 		
<p>Fluency:</p> <p>Name four (Circle, Square, Triangle, Rectangle) 2 dimensional shapes and its attributes</p> <p>Name four (Sphere, Cube, Cylinder, Cone) 3 dimensional shapes and its attributes</p>		

Vocabulary:

Area

Corners/Vertices

Sides

Circle

Square

Triangle

Rectangle

Sphere

Cube

Cylinder

Cone

Technology/Manipulatives/Resources:

- 2 dimensional shape blocks
- 3 dimensional shape blocks
- Mat man pieces
- Attribute block
- .dot stickers

Authentic Performance Assessments:

Small groups of students will design a vehicle using 2 and 3-dimensional shape blocks/manipulatives that then can race against each other. Each group will present their vehicle to describe and explain the shapes used to create it.

Unit 2

Authentic Performance Assessment Task

- Students review the 2D and 3D shapes explored throughout the unit.
- Students split into small groups.
- Small groups build a vehicle using 2D and 3D manipulatives.
 - Students can use any 2D and 3D shapes (they must be able to name the shapes and the attributes so that they can later present their creations).
 - Students need to build their vehicles so that the vehicles are mobile.
- Small groups present their vehicles to their classmates.
 - Each student selects one component of the vehicle to present, describing what shapes were used and why.
- Students conduct a race with their vehicles.

Rubric

Student Name:

Date:

Guiding Questions	1	2	3	4
What shapes did you use to create your vehicle?	Student is unable to select or describe indicated shapes. Takes considerable time to complete tasks, looks to the teacher for help often.	Student struggles to identify indicated shapes randomly, resulting in some correct and some incorrect names.	Student identifies a shape from the vehicle but is unable to consistently name it.	Student consistently correctly identifies a shape.
What attribute of the shape make the block a good choice for that part of the vehicle?	Student is unable to describe the attributes of a given shape. Takes considerable time to complete tasks, looks to the teacher for help often.	Student struggles to identify a shape from the vehicle and is unable to discuss its attributes.	Student is able to identify indicated shapes and names some correct and incorrect attributes of a shape.	Student correctly identifies and describes several attributes of the shape from the vehicle that match the shape.

Grade: Kindergarten	Unit Name: Unit 3: Classify and Count Number 6-10	Duration: 15 Days/3 weeks
Essential Questions: <ul style="list-style-type: none"> • How are numbers used to quantify, compare, represent, and model quantities? • How can numbers support communication? 	Real World Problems/Applications: <ul style="list-style-type: none"> • Count fingers/toes • Count to complete daily attendance routines • Write days on the calendar • Determine who has more/less manipulatives • Represent quantiles of pennies • Divide a book into chapters • Divide a set of farm animals into two stalls/pens 	
Standards/Eligible Content (Skills): CC.2.1.K.A.1 Know number names and write and recite the count sequence CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities CC.2.4.K.A.4 Classify objects and count the number of objects in each category	Standards Reinforced: N/A	
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Begin to recognize that a number represent a specific quantity. • Connect the quantity to the written symbol. • Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning). • Construct arguments using concrete representations such as objects, pictures, drawings, and actions. • Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. • Group like objects based on attributes 		
Reading/Writing/Listening/Speaking Skills: <ul style="list-style-type: none"> • Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like, “How did you get that?” and “Why is that true?” • Begin to develop their clear and precise mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” • Explain their thinking to others and respond to others’ thinking. • Compare the two representations side-by-side 		

Fluency:

- Recognize numbers 6-10
- Produce numerals correctly 6-10
- Recite number sequence 6-10

Vocabulary:

digit
equal
greater than
less than
ones
quantity
total

Technology/Manipulatives/Resources:

- ten frame
- counting bears
- beans
- blocks
- beads
- classroom objects
- number cards
- missing number decks

Authentic Performance Assessments:

Students will create a number/counting book which includes a page for each number 6-10. Students will select a theme and represent quantities with a number, model the quantity with pictures that allow for one-to-one correspondence and the count sequence to be modeled. During the creation of the book students will verbally compare quantities (compose and decompose) for assessment purposes.

Unit 3

Authentic Performance Assessment Task

- Students discuss the many different ways to represent numbers and quantities.
- Teacher demonstrates and discusses with students how to create a number book for numbers 6-10.
- Each page must contain the following components:
 - numeral
 - number word
 - picture (labeled with count sequence)
 - pictures should represent two groups of different attributes
- Other components may be included (ten frame, fingers, etc.) if students desire to do so.
- Students select a theme (bug, cars, flowers) for their number pages and create a page for each number from 6 to 10.
- Students assemble their pages into a book.
- Students can share with their peers a page from their number book to explain what they included and justify their work.
- Students can then keep their number books as a reference tool or share them with younger students (perhaps siblings or preschool students) as a learning tool.

Rubric

Student Name:

Date:

Guiding Questions	1	2	3	4
How can you show me a quantity in a counting book?	<ul style="list-style-type: none"> Student shows little evidence of counting numerals, no understanding of one to one correspondence, and is almost non-responsive. 	<ul style="list-style-type: none"> Student inconsistently draws sets of objects to represent the given number. Student is unable to identify groups and is unable to state a reason why she knows there are 10 or fewer objects. 	<ul style="list-style-type: none"> Student correctly counts and states the number of pictures with more time elapsed. Student is able to verbalize how she/he knows there are 10 or fewer objects but is unclear in her explanation. 	<p>Student correctly:</p> <ul style="list-style-type: none"> Counts the objects. Counts 10 or fewer objects and gives a reasonable answer to how she knows there are 10 or less (e.g., "I counted all of the cubes one at a time.").
How can smaller sets make a larger set?	<ul style="list-style-type: none"> Student shows little evidence of understanding zero or how to solve <i>put together with result unknown</i> problems. Numbers are illegible. 	<ul style="list-style-type: none"> Student shows an early understanding of how to solve <i>put together with result unknown</i> problems and demonstrates weak explanation skills with incomplete reasoning. Student has difficulty counting the sets. 	<ul style="list-style-type: none"> Student completes three of the four tasks. For example, student solves the <i>put together with result unknown</i> problem but cannot clearly explain his/her thinking. 	<p>Student correctly:</p> <ul style="list-style-type: none"> Solves the <i>put together with result unknown</i> problem using cubes. Explains his thinking, citing the solution process.
How can you label the pictures you drew to quantify each number?	<ul style="list-style-type: none"> Student shows little evidence of understanding that a quantity represents a specific number. 	<ul style="list-style-type: none"> Student shows evidence of beginning to understand quantities represents a specific number but inconsistently represents a given number. 	<ul style="list-style-type: none"> Student most of the time correctly represents quantities 6-10 with pictures. 	<ul style="list-style-type: none"> Student correctly represents quantities 6-10 with pictures.
How can you label the pictures you drew using numerals in the correct sequence?	<ul style="list-style-type: none"> Student shows little evidence of understanding numeral writing and/or cannot complete most of the 	<ul style="list-style-type: none"> Student shows evidence of beginning to understand numbers but may be out of order or may/may not say and 	<ul style="list-style-type: none"> Student shows evidence of understand of count sequence and can write the numerals with some reversals. 	<ul style="list-style-type: none"> Student shows evidence of understand of count sequence and can write the numerals without reversals.

	tasks.	write the numeral.	<ul style="list-style-type: none"> • Student writes four out of six numerals correctly, with a maximum of one reversal. 	
How can you represent the number?	<ul style="list-style-type: none"> • Student shows little evidence of understanding organized counting, and matching concrete objects to the corresponding abstract numeral and/or cannot complete most of the tasks. 	<ul style="list-style-type: none"> • Student shows evidence of beginning to understand but miscounts. Student struggles with one-to-one correspondence. 	<ul style="list-style-type: none"> • Student correctly counts by touching each object and states the correct number of objects. 	<ul style="list-style-type: none"> • Student quickly and correctly subitizes and states the correct number of objects.
Comparing the two sets, how would you describe the quantity using more and less?	<ul style="list-style-type: none"> • Student shows little evidence of understanding more or is unable to complete the task. 	<ul style="list-style-type: none"> • Student shows evidence of beginning to understand that more is a greater number in the counting sequence and less is a fewer number in the counting sequence but requires support to recall and apply the concept. 	<ul style="list-style-type: none"> • Student accurately completes most of the tasks. For example, student identifies 7 as 1 more than 6, but is unable to identify 8 as 1 more than the numeral 7. 	<p>Student correctly:</p> <ul style="list-style-type: none"> ▪ Identifies the greater set such as 1 more than 6 is 7. ▪ Identifies the lesser set such as 1 less than 9 is 8.

Grade: Kindergarten	Unit Name: Unit 4 Comparison with Length, Weight, Area, and Capacity with Numbers to 10	Duration: 20 Days/4 weeks
Essential Questions: <ul style="list-style-type: none"> • How can mathematics support effective communication? • When is it is appropriate to estimate versus calculate? • What makes a tool and/or strategy appropriate for a given task? • Why does “what” we measure influence “how” we measure? • In what ways are the attributes of objects measured, calculated and/or interpreted? 	Real World Problems/Applications: <ul style="list-style-type: none"> • Measuring feet for shoes • Measuring ingredients for a recipe • Securing enough supplies for a party • Comparing packaged and bulk quantities • Use balances to compare quantities • Compare height of students • Filling a hula hoop with students 	
Standards/Eligible Content (Skills): CC.2.1.K.A.3 - Apply the concept of magnitude to compare numbers and quantities. CC.2.4.K.A.1 - Describe and compare attributes of length, area, weight, and capacity of everyday objects.	Standards Reinforced: CC.2.4.K.A.4 - Classify objects and count the number of objects in each category.	
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Begin to consider the available tools (including estimation) when solving a mathematical problem. Decide when certain tools might be helpful. • Decide that it might be advantageous to use linking cubes to represent two quantities. • Compare the two representations side-by-side. • Use benchmarks to make estimates of length, weight 		
Reading/Writing/Listening/Speaking Skills: <ul style="list-style-type: none"> • Visualize quantities to compare numerals • Make inferences to support estimations • Question what tool is best to measure and what attribute to measure for deeper understanding • Explain process for making a reasonable estimate 		
Fluency: <ul style="list-style-type: none"> • Comparing numbers 0-10 • Differentiate whether capacity, area, weight, length are being measuring 		
Vocabulary: area capacity length weight		

greater than
less than
equal
quantity

Technology/Manipulatives/Resources:

- various manipulatives
- balance scales
- containers of various sizes and shapes
- rice, cotton, etc.
- number cards
- cubes
- measuring cups
- string
- beans
- clay
- Flat square color tiles to cover a flat shape
- Cubes to fill a rectangular prism

Authentic Performance Assessments:

Students will create a container (cup, bowl, etc.) then use it to measure area with beans, capacity with cubes, length with string, and weight with a balance. Students will report out to peers their findings.

Unit 4

Authentic Performance Assessment Task

- Students review measurable attributes of length, weight, area, and capacity and how to measure those attributes.
- Students create their own containers.
 - Possible building materials – playdough, clay, paper, etc. (depending on materials available in classroom)
 - Perhaps consult with art teacher to see if students can make containers in art class.
- Students gather in small groups to compare measurable attributes of their containers.
 - Students determine how to measure attributes of length, weight, area, and capacity (i.e. by estimation or nonstandard measurement tools).
 - Students measure (using the manipulatives listed below) and record their findings (measurements/comparisons and how they know) on the recording sheet (see next page).
 - For weight, students can use a balance - students partner up within small groups and put containers on the balance

- For length students can use string – students cut strings to match the length of each container and then compare string lengths
- For area students can use beans – students trace the base of the containers, lay beans inside the outline, and count the number of beans
- For capacity students can use cubes – students fill containers with cubes, count and record the number of cubes
- Students present their findings to classmates using the recording sheets as a reference.

Rubric

Student Name:

Date:

Guiding Questions	1	2	3	4
<p>Using a string, how can you describe the length of your container and how does it compare to other's containers?</p>	<p>Student shows little evidence of understanding how to find the length and cannot make a comparison.</p>	<p>Student struggles to:</p> <ul style="list-style-type: none"> • use the string to measure the distance from one end to the other end. • begin to measure from end to end, but needs prompting. • make the string span the full distance to both ends. 	<p>Student uses the string to measure the container with the strings well but is unable to perform a small part of the task, for example:</p> <ul style="list-style-type: none"> ▪ Uses the word <i>longer than</i> or <i>shorter than</i> incorrectly. ▪ States that the string is being measured rather than the length of the string. 	<p>Student:</p> <ul style="list-style-type: none"> ▪ Arranges the strings to share an endpoint. ▪ Uses the words <i>longer than</i> correctly to compare. ▪ Uses the words <i>shorter/longer than</i> correctly to compare. ▪ States that length is being compared or how long the strings are.
<p>Using cubes, how can you describe the capacity of your container and how does it compare to other's containers?</p>	<p>Student shows little evidence of understanding how to find the capacity and cannot make a comparison.</p>	<p>Student struggles to:</p> <ul style="list-style-type: none"> • use the cubes to measure the full capacity. • begin to fill the container, but needs prompting to measure the full capacity. 	<p>Student uses the cubes to measure the capacity of the container well but is unable to perform a small part of the task, for example:</p> <ul style="list-style-type: none"> ▪ Uses the word <i>greater/less than</i> or incorrectly. ▪ States that the cubes are being measured rather than the capacity of the container. 	<p>Student:</p> <ul style="list-style-type: none"> ▪ Uses cubes to accurately fill the container. ▪ Uses the words <i>greater/less than</i> correctly to compare. ▪ States that capacity is being compared or identifies the capacity.

<p>Using beans, how can you describe the area of your container and how does it compare to other's containers?</p>	<p>Student shows little evidence of understanding how to find the area and cannot make a comparison.</p>	<p>Student struggles to:</p> <ul style="list-style-type: none"> • use the beans to measure the full area. • begin to fill the area, but needs prompting to measure the full area. 	<p>Student uses the beans to measure the area of the container well but is unable to perform a small part of the task, for example:</p> <ul style="list-style-type: none"> ▪ Uses the word <i>greater/less than</i> or incorrectly. ▪ States that the beans are being measured rather than the area of the container. 	<p>Student:</p> <ul style="list-style-type: none"> ▪ Uses beans to accurately fill the area of the container. ▪ Uses the words <i>greater/less than</i> correctly to compare. ▪ States that area is being compared or identifies the area.
<p>Using a balance, how can you describe the weight of your container and how does it compare to other's containers?</p>	<p>Student shows little evidence of understanding how to find the weight and cannot make a comparison.</p>	<p>Student struggles to:</p> <ul style="list-style-type: none"> • use the balance to measure the area. • begin to fill the weight, but needs prompting to measure the weight. 	<p>Student uses the balance to measure the weight of the container well but is unable to perform a small part of the task, for example:</p> <ul style="list-style-type: none"> ▪ Uses the word <i>greater/less than</i> or incorrectly. ▪ States that the containers are being measured rather than the weight of the container. 	<p>Student:</p> <ul style="list-style-type: none"> ▪ Uses balance to accurately weight the container. ▪ Uses the words <i>greater/less than</i> correctly to compare. ▪ States that area is being compared or identifies the weight.
<p>How did the student communicate their ideas?</p>	<p>Student shows little evidence of comparison and is unable to articulate thoughts.</p>	<p>Student shows evidence of beginning to understand comparison but has not yet mastered the language of comparison.</p>	<p>Student makes a small error such as:</p> <ul style="list-style-type: none"> ▪ Omitting the word <i>than</i> when using comparison words or confuses <i>less than</i> with <i>more than</i>, though knows which number is larger and more than, even though it is evident. 	<p>Student correctly:</p> <ul style="list-style-type: none"> ▪ Puts the objects in lines to match and compare them. ▪ Uses <i>more than</i> and <i>less than</i> to compare 7 and 5. ▪ Compares the numerals 8 and 4.

Name _____

Module 4

Recording Sheet

Unit 4 Comparison with Length, Weight, Area, and Capacity with Numbers to 10

My container is

longer	shorter
--------	---------

than _____ container.



My container is

lighter	heavier
---------	---------

than _____ container.



My container held _____ cubes.

Trace your container here.

The area of my container is _____ beans.

Grade: Kindergarten	Unit Name: Unit 5 Number Pairs, Addition and Subtractions of Numbers to 10	Duration: 45 Days/9 weeks
Essential Questions: <ul style="list-style-type: none"> • How is mathematics used to quantify, compare, represent, and model numbers? • How are relationships represented mathematically? • How can recognizing repetition or regularity assist in solving problems more efficiently? 		Real World Problems/Applications: <ul style="list-style-type: none"> • Compute sports scores • Play “Race to 10” • Add/subtract snack sets • Add/subtract dots on dominoes • Add/subtract items in a shopping cart • Adding/subtracting tickets to go on a fair ride
Standards/Eligible Content (Skills): CC.2.1.K.B.1 - Use place value to compose and decompose numbers within 19. CC.2.2.K.A.1 - Extend concepts of putting together and taking apart to add and subtract within 10.		Standards Reinforced: CC.2.1.K.A.1 Know number names and write and recite the count sequence CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Construct arguments using concrete referents, such as objects, pictures, drawings, and actions. • Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” • Check their thinking by asking themselves, “Does this make sense?” or they may try another strategy. • Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. • Connect the different representations and explain the connections. • Use all of representations as needed. • Notice repetitive actions in counting and computation, etc. For example, they may notice that the next number in a counting sequence is “one more”. When counting by tens, the next number in the sequence is “ten more” (or one more group of ten). • Begin to discern a pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that $3 + 2 = 5$ and $2 + 3 = 5$. 		
Reading/Writing/Listening/Speaking Skills: <ul style="list-style-type: none"> • Visualize quantities to compare numerals • Writing and reading an expression, from left to right (COP) 		

- Summarizing and note taking during story problems
- Use clear and precise language to communicate ideas

Fluency:

- Addition to sums of 5
- Subtraction with differences to 5
- Identify the + and – symbols (plus/minus)

Vocabulary:

addition
subtraction
equal
total

Technology/Manipulatives/Resources:

- Various manipulatives
- Number bonds/part-part-whole boards
- Number lines
- 10 frames
- Equation template

Authentic Performance Assessments:

Students will tell farm animal stories using multiple mathematical representations that utilize addition and subtraction.

Unit 5

Authentic Performance Assessment Task

- Make packets for each student of the “Unit 5 Recording Sheets” (see pages after the rubric on the following page).
- Administer the assessment as a whole group activity, reading the directions to the class and allowing students adequate time to complete the story problems.
- Assess student work according to the rubric on the next page.

Rubric

Student Name:

Date:

Guiding Questions	1	2	3	4
How can you solve a <i>result unknown</i> addition story problem using pictures?	<ul style="list-style-type: none"> Student shows little evidence of understanding the relationship between the pictures and the story problem and is unable to draw a picture that matches the problem. 	<ul style="list-style-type: none"> Student draws random pictures that do not match the quantities in the story problem. 	<ul style="list-style-type: none"> Student draws pictures that represent the story problem with one mistake. 	<ul style="list-style-type: none"> Student draws pictures that correctly represents the story problem.
How can you solve an <i>addend unknown</i> addition story problem using a number bond?	<ul style="list-style-type: none"> Student shows little evidence of understanding the relationship between the parts and the whole of the number bond and is unable to complete the number bond. 	<ul style="list-style-type: none"> Writes random numbers in the parts of the number bond. 	<ul style="list-style-type: none"> Confuses the parts and whole of the number bond. Needs teacher support and/or more time to write the correct parts/whole in the number bond. 	<ul style="list-style-type: none"> Makes a number bond using the correct combine of parts and whole.
How can you solve a <i>both addends unknown</i> addition story problem using an equation?	<ul style="list-style-type: none"> Student shows little evidence of understanding the addition equations and is unable to write an addition equation. 	<ul style="list-style-type: none"> Student writes incorrect numbers in the blanks or puts the correct numbers in the wrong places. Student writes an incorrect addition sentence for the story. 	<ul style="list-style-type: none"> Student requires teacher support and/or more time to correctly write an equation. 	<ul style="list-style-type: none"> Student correctly and independently writes an addition sentence to match the story problem.

<p>How can you solve a <i>result unknown</i> subtraction story problem using pictures?</p>	<ul style="list-style-type: none"> • Student shows little evidence of understanding the relationship between the pictures and the story problem and is unable to draw a picture that matches the problem. 	<ul style="list-style-type: none"> • Student draws random pictures that do not match the quantities in the story problem. 	<ul style="list-style-type: none"> • Student draws pictures that represent the story problem with one mistake. 	<ul style="list-style-type: none"> • Student draws pictures that correctly represents the story problem.
<p>How can you solve a <i>change unknown</i> subtraction story problem using a number bond?</p>	<ul style="list-style-type: none"> • Student shows little evidence of understanding the relationship between the parts and the whole of the number bond and is unable to complete the number bond. 	<ul style="list-style-type: none"> • Writes random numbers in the parts of the number bond. 	<ul style="list-style-type: none"> • Confuses the parts and whole of the number bond. • Needs teacher support and/or more time to write the correct parts/whole in the number bond. 	<ul style="list-style-type: none"> • Makes a number bond using the correct combine of parts and whole.
<p>How can you solve a <i>start unknown</i> subtraction story problem using an equation?</p>	<ul style="list-style-type: none"> • Student shows little evidence of understanding subtraction equations and is unable to write a subtraction equation. 	<ul style="list-style-type: none"> • Student writes incorrect numbers in the blanks or puts the correct numbers in the wrong places. • Student writes an incorrect subtraction sentence for the story. 	<ul style="list-style-type: none"> • Student requires teacher support and/or more time to correctly write an equation. 	<ul style="list-style-type: none"> • Student correctly and independently writes a subtraction sentence to match the story problem.

Name _____

Unit 5

Recording Sheet

Unit 5 Number Pairs, Addition and Subtractions of Numbers to 10

1. Using pictures, solve this problem.

Two pigs sat in the mud.

Six pigs jump in to join them.

How many pigs are in the mud?



2. Using a number bond, solve this problem.

Three sheep are in a pen.

Some more sheep join them.

Now there are seven sheep.

How many sheep joined them?



3. Write an equation to solve this problem.

Old McDonald has 10 cows on the farm.

How many cows could be in the barn?

How many cows could be in the field?

4. Using pictures, solve this problem.

There are six hens in the coop.

A fox sneaks in and five hens are gone.

How many hens are left?



5. Using a number bond, solve this problem.

There are nine horses by the fence.

Some jump over the fence.

Now there are four horses by the fence.

How many horses jumped over the fence?

6. Write an equation to solve this problem.

Some ducks are in the pond.

Five flew away.

Now there are five ducks in the pond.

How many ducks were in the pond to begin with?

Grade: Kindergarten	Unit Name: Unit 6 Number 10-20, Counting to 100 by Ones and Tens	Duration: 35 Days/7 weeks
Essential Questions: <ul style="list-style-type: none"> • How can patterns be used to describe relationships in mathematical situations? • How can mathematics support effective communication? • How is mathematics used to quantify, compare, represent, and model numbers? • How can recognizing repetition or regularity assist in solving problems more efficiently? 	Real World Problems/Applications: <ul style="list-style-type: none"> • Count to complete daily attendance routines • Counting the days of school • Write the calendar date in numbers (4-13-19) • Count an inventory • Wedding Planning • Grouping pennies into sets of 10 • Arranging bowling pins • Counting attendance to an event 	
Standards/Eligible Content (Skills): CC.2.1.K.A.1 Know number names and write and recite the count sequence CC.2.1.K.B.1 Use place value to compose and decompose numbers within 19	Standards Reinforced: CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities	
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Begin to recognize that a number represent a specific quantity. • Connect the quantity to the written symbol. • Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning). • Construct arguments using concrete representations such as objects, pictures, drawings, and actions. • Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. 		
Reading/Writing/Listening/Speaking Skills: <ul style="list-style-type: none"> • Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like, “How did you get that?” and “Why is that true?” • Begin to develop their clear and precise mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” 		

- Explain their thinking to others and respond to others' thinking.

Fluency:

- Recognize numbers 11-20
- Produce numerals correctly 11-20
- Recite number sequence 0-100 by ones and tens

Vocabulary:

digit
equal
greater than
less than
ones
tens
place value
quantity
total

Technology/Manipulatives/Resources:

- Double ten frames
- Hide zero cards
- 100 board
- Base 10 blocks (cubes, rods, flats)
- Rekenrek
- Number cards 0-100

Authentic Performance Assessments:

Students will count, package, and check for quality control in a straw factory to count, ordering quantities, write numbers, and group sets into tens.

Unit 6

Authentic Performance Assessment Task

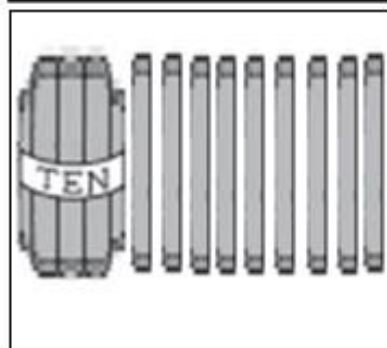
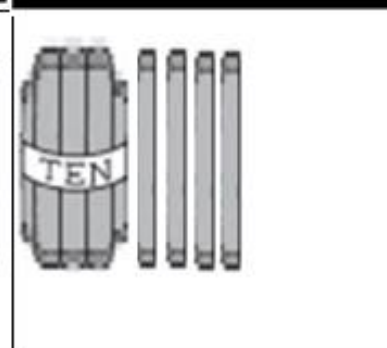
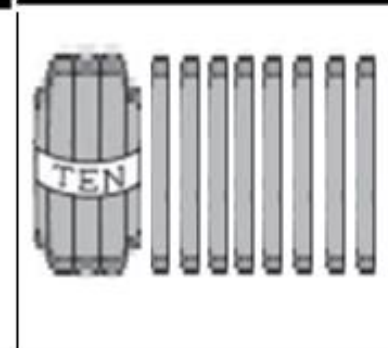
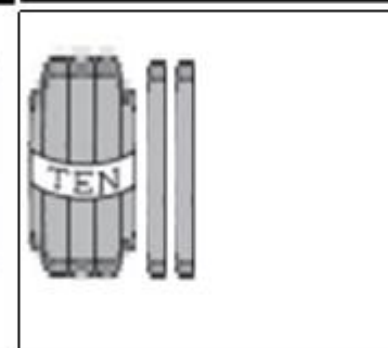

- Set up a scenario in a straw factory where students are workers and the teacher is the project manager guiding students through various roles in the factory.
 - Optional – show a video of how straws are made (virtual field trip - <https://www.youtube.com/watch?v=QjdNYOKCnmk>)
- Task 1 – Packaging Station A
 - Goal - students package 100 straws
 - Provide students with more than 100 straws.
 - Students count by ones to reach 100.
 - Students bring their straws to the teacher to see if they fit in the box designed to fit exactly 100 straws. Students examine how the straws fit and explain how the straws fit (e.g. if there is extra room in the box, then students know they did not reach 100 yet; conversely, if not all of the straws fit in the box, students know they counted past 100).
- Task 2 – Quality Control Check
 - Goal – students conduct a quality control check of the 100-count straw packages
 - Students swap straw packs with a partner to check their work.
 - Students count partners' work by counting by tens.
 - Students share their findings with their partners and adjust work as necessary.
- Task 3 – Packaging Station B
 - Goal – students place quantities of straws between 11-20 in smaller boxes
 - Students look at boxes with pre-labeled quantities of straws and put that many straws into the box.
- Task 4 – Ink Press Station
 - Goal - students design ink press labels for other straw packages
 - Students are given images of straws being placed into boxes.
 - Students count the straws and label the boxes with the total number of straws.
- Task 5 – Shipping Station
 - Goal - students prepare straw packages for shipment
 - Students gather in small groups to order real straw packages from least to greatest.

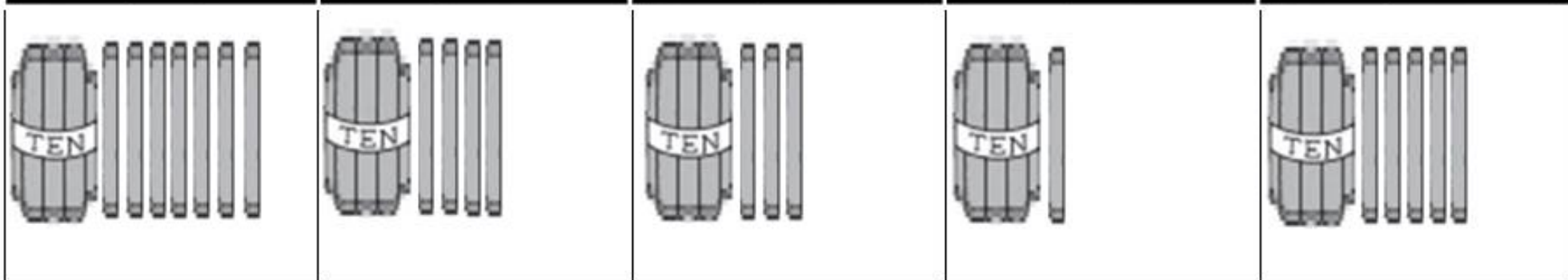
Name _____

Unit 6: Numbers 1-9 Assessment

Count the straws to be placed in each box and mark the ink press template for the box with a number.

 <p>meijer Straw Count Flexible Straws STAWMS 7/25 IN (LENGTH) X 25 IN (BA) (18.37 cm X 64 cm (BA)) NOT FOR MICROWAVE USE</p>	 <p>meijer Straw Count Flexible Straws STAWMS 7/25 IN (LENGTH) X 25 IN (BA) (18.37 cm X 64 cm (BA)) NOT FOR MICROWAVE USE</p>	 <p>meijer Straw Count Flexible Straws STAWMS 7/25 IN (LENGTH) X 25 IN (BA) (18.37 cm X 64 cm (BA)) NOT FOR MICROWAVE USE</p>	 <p>meijer Straw Count Flexible Straws STAWMS 7/25 IN (LENGTH) X 25 IN (BA) (18.37 cm X 64 cm (BA)) NOT FOR MICROWAVE USE</p>	 <p>meijer Straw Count Flexible Straws STAWMS 7/25 IN (LENGTH) X 25 IN (BA) (18.37 cm X 64 cm (BA)) NOT FOR MICROWAVE USE</p>
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Grade: Kindergarten	Unit Name: Unit 7 Analyze, Compare, Create, and Compose Shapes	Duration: 20 Days/4 weeks
Essential Questions: <ul style="list-style-type: none"> • How can geometric properties be used to describe, model, and analyze situations? • How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? • How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving? 	Real World Problems/Applications: <ul style="list-style-type: none"> • Constructing a building (castle, dog house, etc.) • Designing a blueprint • Create tessellations using combinations of 2D shapes • Stacking bales of hay to fit in hay loft • Making a map • Building with Lincoln logs • Wrapping presents 	
Standards/Eligible Content (Skills): CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.	Standards Reinforced: CC.2.1.K.A.1 Know number names and write and recite the count sequence. CC.2.1.K.A.2 Apply one to one correspondence to count the number of objects. CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities. CC.2.3.K.A.1 Identify and describe and 2- and 3-dimensional shapes.	
Critical Thinking/Reasoning Skills: <ul style="list-style-type: none"> • Construct arguments using concrete referents, such as objects, pictures, drawings, and actions. • Use clear and precise language in their discussions with others and in their own reasoning. • Experiment with representing problems situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, etc. • Connect the different representations and explain the connections. • Begin to discern a pattern or structure. • Identifying similarities and differences. 		
Reading/Writing/Listening/Speaking Skills: <ul style="list-style-type: none"> • Visualize shapes within shapes • Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like, “How do you know that is a triangle?” and “Why is that true?” 		

- Explain their thinking to others and respond to others' thinking
- Compare two representations side-by-side

Fluency:

- Draw 2-dimensional shapes
- Draw 3-dimensional shapes

Vocabulary:

Corners/Vertices

Sides

Circle

Square

Triangle

Rectangle

Sphere

Cube

Cylinder

Cone

Technology/Manipulatives/Resources:

- Straws/toothpicks (or line/edge type materials)
- Playdough/marshmallows/gumdrops (sticky, corner-like materials)
- Pattern blocks
- Pattern block mats
- Straight-edge tools

Authentic Performance Assessments:

Students will design a playground, both in blueprint form (drawing 2-dimensional shapes) and in a miniature model (creating/combining 3-dimensional shapes).

Unit 7

Authentic Performance Assessment Task

- Students review the relationship between 2D and 3D shapes explored throughout the unit.
- Students design a playground, having the option of working individually or in small groups.
- Students create a blueprint of their playground by drawing 2D shapes and explain to the teacher how they chose which 2D shapes to represent 3D shapes. Students also explain 2 or more ways they could have created a given shape by combining other shapes.
- Students use their blueprints to build a 3D miniature model of their playground using any available materials (e.g. straws and playdough, papers folded/rolled/glued/taped together, toothpicks and marshmallows, etc.).
- Students present their playgrounds to their peers, explaining the relationship between their blueprints and miniature models as well as explaining their choice of materials.

Rubric

Guiding Questions	1	2	3	4
What 2D shapes did you use to create your blueprint and why?	<p>Student is unable to describe and/or draw shapes.</p> <p>Student takes considerable time to complete tasks, looks to the teacher for help often.</p>	<p>Student inconsistently identifies shapes on blueprint and/or has difficulty drawing 2D shapes.</p> <p>Student cannot relate the 2D shapes to the 3D shapes they represent.</p>	<p>Student correctly draws and identifies the 2D shapes on the blueprint but struggles to relate the 2D shapes to the 3D shapes they represent.</p>	<p>Student consistently and correctly identifies the 2D shapes and can explain their relationship to 3D shapes.</p>
What are two different ways that you could make a shape from other shapes?	<p>Student is unable to describe how to make a given shape out of other shapes.</p>	<p>Student can demonstrate how they could compose a shape using other shapes but has difficulty articulating it.</p>	<p>Student can demonstrate and/or articulate one way that they could compose a shape using other shapes.</p>	<p>Student can demonstrate and/or articulate two or more ways that they could compose a shape using other shapes.</p>
What 3D shapes did you combine to make the components of your playground model?	<p>Student is unable to describe the 3D shapes used in the playground model.</p> <p>Student takes considerable time to complete tasks, looks to the teacher for help often.</p>	<p>Student inconsistently identifies 3D shapes in the playground model.</p> <p>Student may or may not be able to articulate how the smaller 3D shapes are used to compose larger shapes.</p>	<p>Student correctly identifies the 3D shapes in the playground model but struggles to articulate how the smaller 3D shapes are used to compose larger shapes.</p>	<p>Student correctly identifies the 3D shapes in the playground model and can articulate how the smaller 3D shapes are used to compose larger shapes.</p>