Kindergarten Unit 2

Exploring and Representing Numbers thru 19; Describing and Comparing Measurable Attributes

Unit Planning Team:

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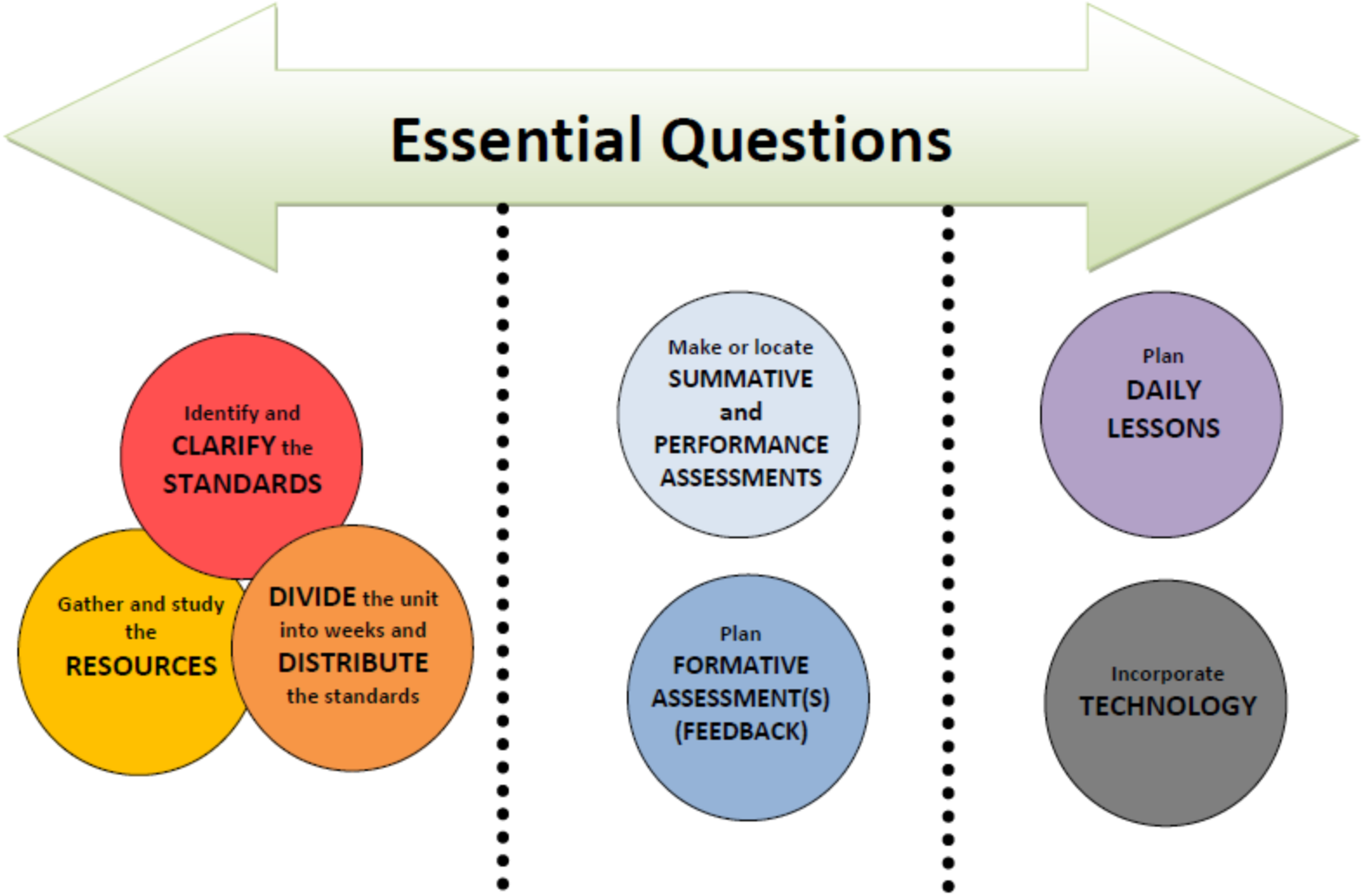
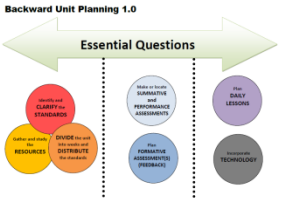
Backward Unit Planning 1.0



Essential Questions



R.P.S. Common Core Math Curriculum | Kindergarten

2nd Quarter (p. 1 of 2)

Exploring and Representing Numbers thru 19; Describing and Comparing Measurable Attributes

Students continue to build their understanding of numbers and how they are used to represent quantities and solve problems. They will continue to model simple joining and separating situations using objects, fingers, mental images, drawings, sounds, acting out situations and verbal explanations. Students will begin to explore the numbers 11-19, representing these numbers with objects or drawings. Students will explore measurable attributes of an object and classify objects based on similarities and differences. They will explore direct comparisons of two objects. Comparison begins with developing the meaning of the word "than" in the context of "taller than," "shorter than," "heavier than," "longer than," etc. This understanding will lead into the more abstract idea of comparing numbers with the terms "more than" and "less than".

Essential Questions:

How can I compare sets of objects?

How can I represent my thinking when solving addition and subtraction story problems?

How can I represent the numbers 11-19?

Counting and Cardinality	
Know number names and the count sequence.	
K.CC.1	Count to 100 by ones and by tens.
Minimum Quarterly Expectations: Rote count by 1's to 50; Rote count by 10's to 50	
K.CC.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
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).
Minimum Quarterly Expectations: Write numbers 0-10	
Count to tell the number of 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.
Minimum Quarterly Expectations: Count to answer "how many" questions about as many as 10 objects...	
Compare numbers	
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. (Include groups with up to ten objects)
K.CC.7	Compare two numbers between 1 and 10 presented as written numerals.

Revised Essential Questions

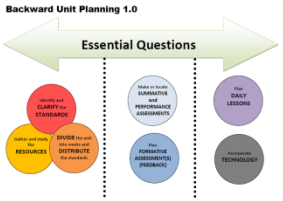
How can I compare sets of objects?

How can I show my thinking when solving story problems?

How can I build numbers?

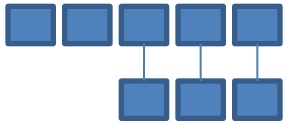
How can I sort objects?

Counting and Cardinality	
Know number names and the count sequence.	
K.CC.1	Count to 100 by ones and by tens.
Minimum Quarterly Expectations: Rote count by 1's to 50; Rote count by 10's to 50	
K.CC.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
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).
Minimum Quarterly Expectations: Write numbers 0-10	
Count to tell the number of 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.
Minimum Quarterly Expectations: Count to answer "how many" questions about as many as 10 objects…	
Compare numbers	
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. (Include groups with up to ten objects)
K.CC.7	Compare two numbers between 1 and 10 presented as written numerals.



Identify and **CLARIFY** the **STANDARDS**

K.CC.6 Only need to identify if > or <…not how many more or how many less. A numerical value doesn't have to be assigned.

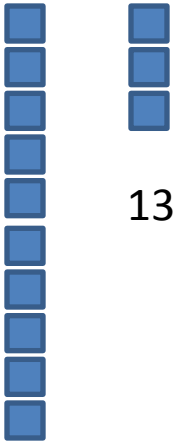


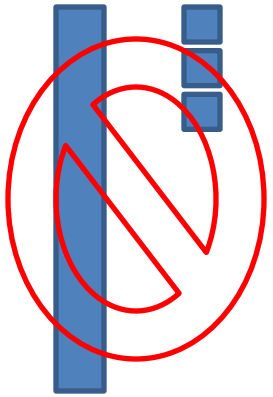
For example:
5 is greater than 3

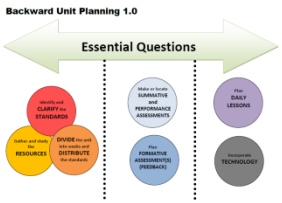
Operations and Algebraic Thinking	
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from	
K.OA.1	Represent addition and subtraction with objects, fingers, mental images, drawings (details not needed), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
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.
Fluency is not formally reported until 3rd quarter - conceptual experiences must be provided throughout the year.	
Numbers and Operations in Base Ten	
Work with numbers 11-19 to gain foundations for place value	
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.
Minimum Quarterly Expectations: Represent numbers 11-19 by using objects or drawings *(Experiences with composing and decomposing numbers 11-19 are encouraged, but are not formally scored.)*	

K.NBT.1 11-19 is represented by 10 ones and further ones NOT one 10 and some ones (which is the 1st grade standard).
http://secc.sedl.org/common_core_videos/

Example of NBT.1







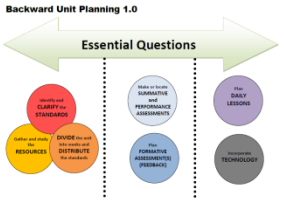
Identify and **CLARIFY** the **STANDARDS**

Measurement and Data	
Describe and compare measurable attributes.	
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. *For example, directly compare the heights of two children and describe one child as taller/shorter.*
Classify objects and count the number of objects in each category.	
K.MD.3	Classify objects into given categories; count the numbers of objects (less than or equal to 10) in each category and sort the categories by count.

K.MD.2

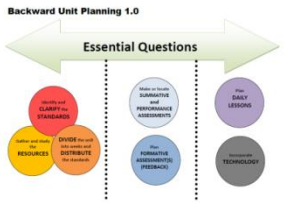
Step 1 – find measurable attributes in common

Step 2 – compare two objects to see which has "more of"/"less of" the common attribute.



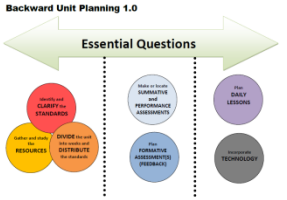
Identify and CLARIFY the STANDARDS

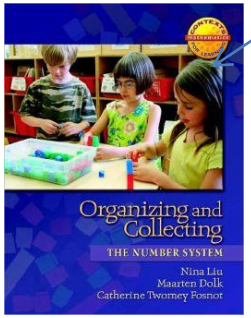
Week	Standards	Week	Standards	Week	Standards
1	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.5	4	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	7	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1
2	K.CC.2 K.MD.1/K.MD.2 K.CC.5	5	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	8	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1
3	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.MD.3	6	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	9	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1 K.MD.1/K.MD.2



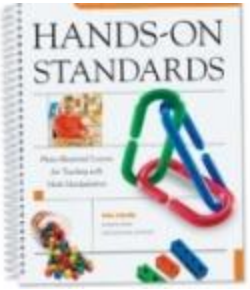
DIVIDE the unit into weeks and **DISTRIBUTE** the standards

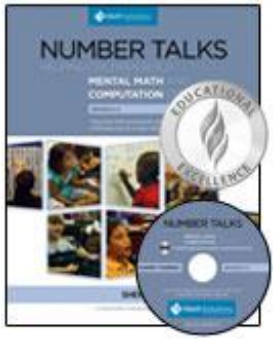
BIG PICTURE OF RESOURCES FOR UNIT TWO

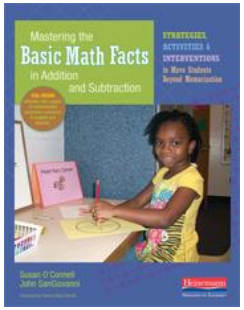


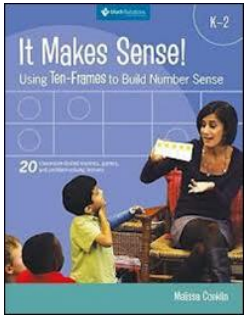


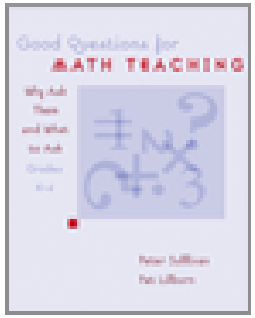
Gather and study the RESOURCES

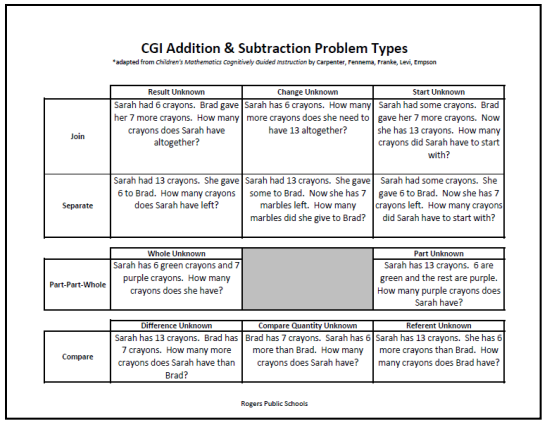












CGI Addition & Subtraction Problem Types

*adapted from *Children's Mathematics Cognitively Guided Instruction* by Carpenter, Fennema, Franke, Levi, Empson

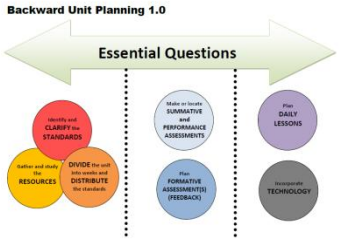
	Result Unknown	Change Unknown	Start Unknown
Join	Sarah had 6 crayons. Brad gave her 7 more crayons. How many crayons does Sarah have altogether?	Sarah has 6 crayons. How many more crayons does she need to have 13 altogether?	Sarah had some crayons. Brad gave her 7 more crayons. Now she has 13 crayons. How many crayons did Sarah have to start with?
Separate	Sarah had 13 crayons. She gave 6 to Brad. How many crayons does Sarah have left?	Sarah had 13 crayons. She gave some to Brad. Now she has 7 marbles left. How many marbles did she give to Brad?	Sarah had some crayons. She gave 6 to Brad. Now she has 7 crayons left. How many crayons did Sarah have to start with?

	Whole Unknown		Part Unknown
Part-Part-Whole	Sarah has 6 green crayons and 7 purple crayons. How many crayons does she have?		Sarah has 13 crayons. 6 are green and the rest are purple. How many purple crayons does Sarah have?

	Difference Unknown	Compare Quantity Unknown	Referent Unknown
Compare	Sarah has 13 crayons. Brad has 7 crayons. How many more crayons does Sarah have than Brad?	Brad has 7 crayons. Sarah has 6 more than Brad. How many crayons does Sarah have?	Sarah has 13 crayons. She has 6 more crayons than Brad. How many crayons does Brad have?

Rogers Public Schools

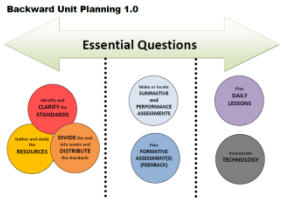
Week	Standards	Structure/Resources	Counting Collections
1	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.5	Counting on from a number using tools CGI problem types Combinations/separations Dot images/ten frames	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
2	K.CC.2 K.MD.1/K.MD.2 K.CC.5	Counting on from a number using tools **Pumpkin Measurement Unit (replaces problem solving for the week)** Exploring Measurement Pumpkins, Pumpkins - Foundations of Measure Dot images/ten frames	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
3	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.MD.3	Counting on from a number using tools CGI problem types Combinations/separations Compare problem with Halloween candy Dot images/ten frames Halloween Candy Sort	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4



DIVIDE the unit into weeks and **DISTRIBUTE** the standards

During 2nd Quarter we are going to pose JRU, SRU, PPW-WU, PPW-Both parts unknown, JCU, and Compare problems.

Week	Standards	Structure/Resources	Counting Collections
4	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	Counting on from a number using tools CGI problem types Combinations/separations Compare problem Dot images/ten frames JRU and JCU with sets starting with 10	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
5	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	Counting on from a number using tools CGI problem types Combinations/separations Compare problem Dot images/ten frames JRU and JCU with sets starting with 10	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
6	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	Counting on from a number using tools Bunk Beds and Apple Boxes (embedded CGI problem types) Compare problem Dot images/ten frames JRU and JCU with sets starting with 10	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4



DIVIDE the unit into weeks and **DISTRIBUTE** the standards

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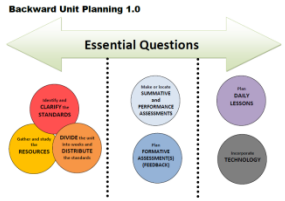
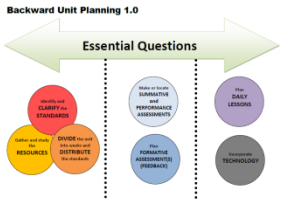
Week	Standards	Structure/Resources	Counting Collections
7	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	Counting on from a number using tools Bunk Beds and Apple Boxes (embedded CGI problem types) Compare problem Dot images/ten frames JRU and JCU with sets starting with 10	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
8	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1	Counting on from a number using tools CGI problem types Combinations/separations Compare problem Dot images/ten frames JRU and JCU with sets starting with 10	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4
9	K.CC.2 K.OA.1/K.OA.2 K.OA.3/K.OA.4 (K.OA.5) K.CC.6/K.CC.7 K.CC.5 K.NBT.1 K.MD.1/K.MD.2	Counting on from a number using tools CGI problem types Combinations/separations Compare problem Dot images/ten frames JRU and JCU with sets starting with 10 Pumpkin Measurement Unit—change pumpkin to holiday theme, i.e. tree or gifts.	K.CC.1 K.CC.3 (Suggested recording based on student needs—post it notes, recording form, etc.) K.CC.4



DIVIDE the unit into weeks and **DISTRIBUTE** the standards

During 2nd Quarter we are going to pose JRU, SRU, PPW-WU, PPW-Both parts unknown, JCU, and Compare problems.

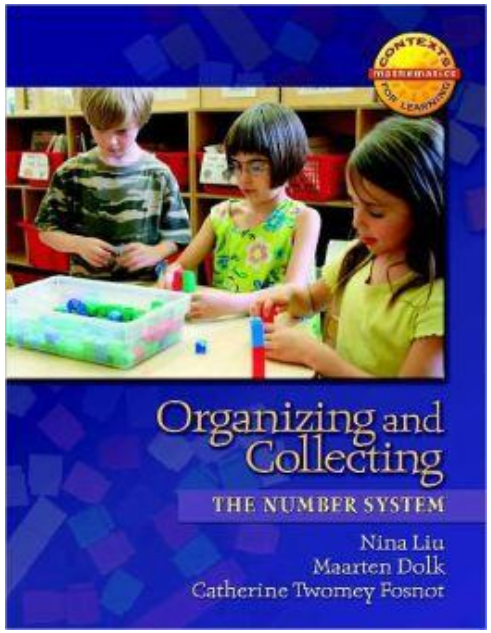
Counting Collections
K.CC.1, K.CC.2, K.CC.3, K.CC.4

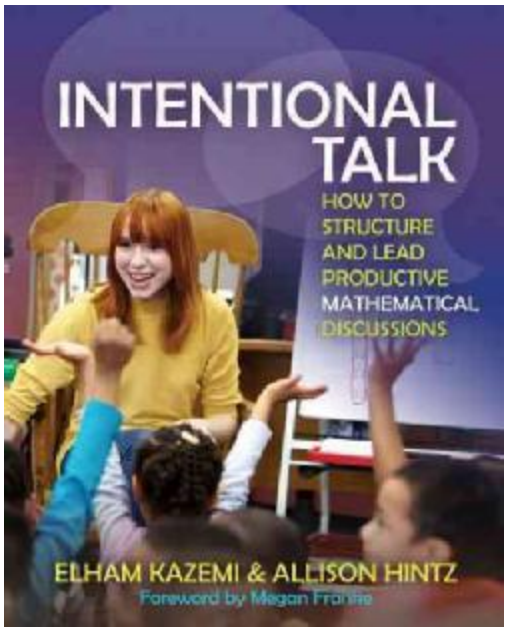


- Conserving a Number (K.CC.2)
  - Teach conservation of a number by having students count on from one day to the next. Record previous day's number for keeping. Ex: A student ends day one with 32 objects. On day two, the same student would count on from 32.
- Recording of Collections (K.CC.3)
  - Based on classroom resources and student needs

DIVIDE the unit into weeks and **DISTRIBUTE** the standards

Resources for Counting Collections:

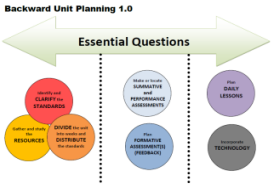




Gather and study the RESOURCES

**Intentional Talk is not a district purchased resource, but several facilitators have it.
Pages 142-145 address all aspects of counting collections.

Combinations and Separations K.OA.3,K.OA.4,K.OA.5



*Combinations/Separations: Progress through combinations of 5, 6, 7 using your formative assessment to guide your instruction. **End of 2nd quarter goal is combinations of 7.**

•Use concrete objects, or example: I can fit 7 apples in my basket. The apples can be red or green. How many different ways can I put red and green apples in my basket? (Use die cuts of apples and allow kids show many different combinations to address K.OA.3. For K.OA.4 (separations) you need to also progress up to 10. Begin with five and move up to 7. For example: I had 4 apples in my basket. Some apples fell out. How many apples fell out? (You would show them 3 apples and hide some behind your back and see if they know that you hid one behind your back).

•After students have had experiences with combinations/separations with concrete objects you can move to part-part-whole: both parts unknown problem type. For example: I have 4 apples in my basket. Some are red and some are green. Using your crayons, show me all the ways you can make 6 apples.

•Shake and Spill Games and Activities (Rogers Curriculum Website)

DIVIDE the unit into weeks and **DISTRIBUTE** the standards

Gather and study the RESOURCES

Bunk Beds and Apple Boxes

K.OA.1-K.OA.5

Understanding Addition and Subtraction

K.OA.1 - K.OA.5

Addition and Subtraction Situations (K.OA.2)

Addition and Subtraction Problem Types (K.OA.2, K.OA.1, K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.OA.3, K.OA.4, K.OA.5)

Bunk Beds and Apple Boxes: Early Number Sense

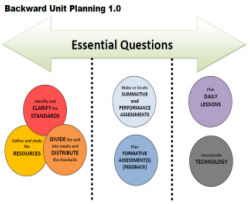
This unit's focus is early number sense. Children explore various arrangements of the same quantity and are supported to develop compensation and equivalence. This unit introduces the arithmetic rack (rekenrek, abacus) as a calculating frame that consists of two rows of ten beads with two sets of five in each row. (K.OA.1 - K.OA.5)

What is an Arithmetic Rack? It is a tool that consists of two rows of ten beads with two sets of five in each row.

***If you do not have rekenreks, you can easily create your own: Directions: How to Make a Rekenrek

Pinterest: Rekenrek

Or, if you would like to purchase a classroom set of 20-Bead Rekenreks, ETA has a classroom set for $84.95 ETA Hand 2 Mind

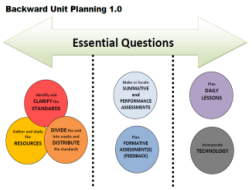


DIVIDE the unit into weeks and **DISTRIBUTE** the standards

Note: This resource has embedded problem types. Do not feel that you need to pose a problem type and use this resource at the same time.

Gather and study the RESOURCES

Purposefully Choosing Problem Types



- K.OA.1/K.OA.2
  - Join Result Unknown (JRU)
  - Separate Result Unknown (SRU)
  - Part Part Whole-Whole Unknown (PPW-WU)
  - Join Change Unknown (JCU)
- K.OA.3/K.OA.4
  - Part Part Whole—Both Parts Unknown
- K.CC.6/K.CC.7
  - Compare Problems.
    - Example: John has 5 pieces of candy. Susie has 7 pieces of candy. How many more pieces does Susie have than John? *Although your students may not successfully answer the number 2, knowing that Susie has more is sufficient.*
    - Comparing Problem Situations
- K.NBT.1—All problems have first number of set as 10.
  - Join Result Unknown (JRU)
    - Example: 10 + 5 = ?
  - Join Change Unknown (JCU)
    - Example: 10 + ? = 15
  - Part Part Whole-Whole Unknown (PPW-WU)
    - Example: 10 + 3 = ?

DIVIDE the unit into weeks and **DISTRIBUTE** the standards

Gather and study the RESOURCES

Problem Types:

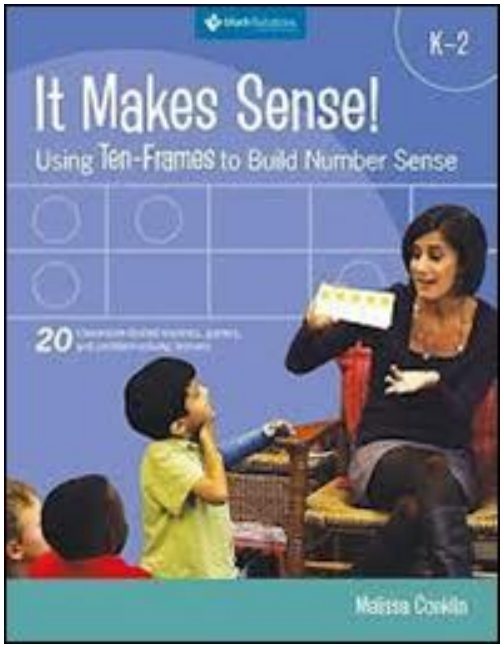
Promote Base Ten

Addition and Subtraction Situations

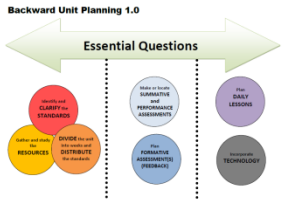
Addition and Subtraction Problem Types

3 Resources you brought that we have not looked at….spend some time review these books and see if you find anything you like.

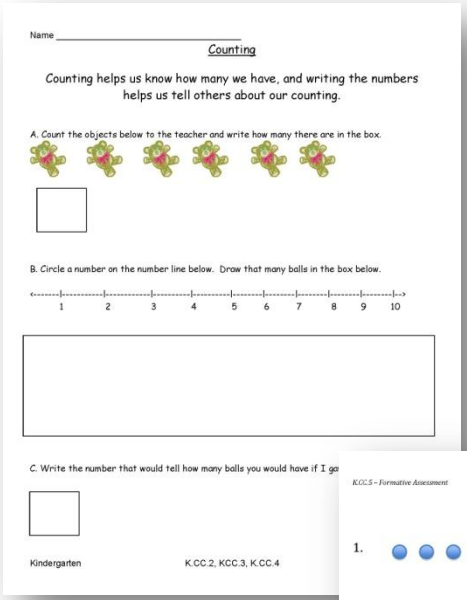
We know you don't have time once you get back to the classroom!!!



Options for Assessment – available online for Unit 2



[U2: Representing Numbers; Measurable Attributes](#) » Lesson Resources


Name _____

Counting

Counting helps us know how many we have, and writing the numbers helps us tell others about our counting.

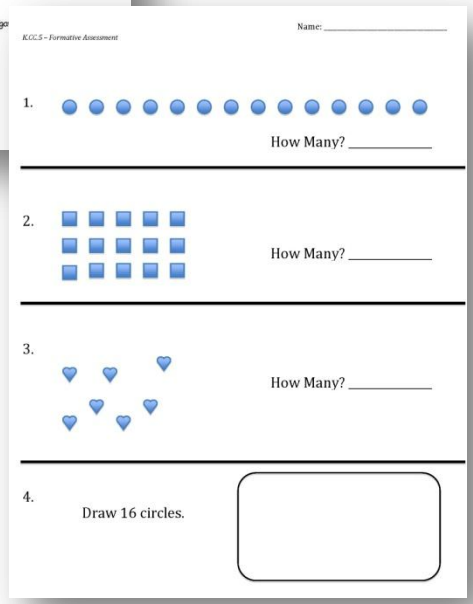
A. Count the objects below to the teacher and write how many there are in the box.

B. Circle a number on the number line below. Draw that many balls in the box below.

1 2 3 4 5 6 7 8 9 10

C. Write the number that would tell how many balls you would have if I ga

Kindergarten K.CC.2, K.CC.3, K.CC.4


K.CC.5 – Formative Assessment

Name: _____

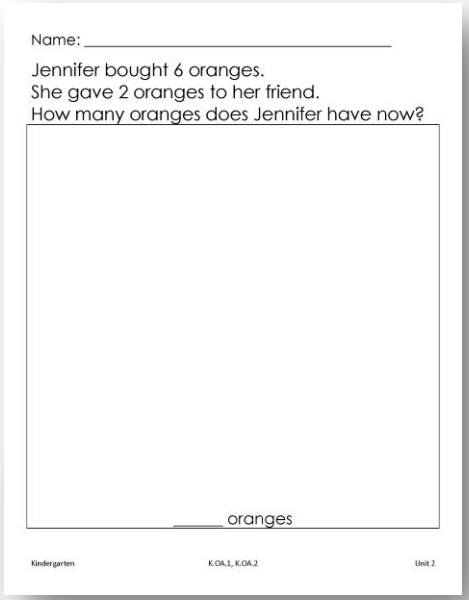
1. How Many? _____

2. How Many? _____

3. How Many? _____

4. Draw 16 circles.

K.CC.2 – K.CC.5


Name: _____

Jennifer bought 6 oranges.
She gave 2 oranges to her friend.
How many oranges does Jennifer have now?

_____ oranges

Kindergarten K.OA.1, K.OA.2 Unit 2

K.OA.1, K.OA.2

Make or locate SUMMATIVE and PERFORMANCE ASSESSMENTS

K.CC.5

LESSONS AND RESOURCES ARE AVAILABLE ONLINE.

Plan
DAILY LESSONS

Incorporate
TECHNOLOGY

NEW Teacher Created Resources pages!!!

RESOURCES

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