Kindergarten Curriculum
Mathematics

Francis Howell School District

HOME SCHOOL

COMMUNITY

LEARNING TOGETHER

Board Approved:
04/03/2014

Francis Howell School District
Kindergarten Curriculum – Mathematics

Mission

Francis Howell School District is dedicated to preparing students today for success tomorrow.

Vision

Every student will graduate with college and career readiness skills.

Values

Francis Howell School District is committed to:

- Provide a consistent and comprehensive education that fosters high levels of academic achievement
- Operate a safe learning environment for all students
- Recruit and retain a high quality staff
- Promote parent, community, student, and business involvement in support of the school district
- Ensure fiscal responsibility
- Develop responsible citizens
- Operate as a professional learning community
- Make appropriate use of technology

Francis Howell School District Graduate Goals

Upon completion of their academic study in the Francis Howell School District, students will be able to:
- gather, analyze and apply information and ideas
- communicate effectively within and beyond the classroom
- recognize and solve problems
- make decisions and act as responsible members of society

Rationale for Elementary Mathematics

Using the Missouri Learning Standards as a base, the Francis Howell K-5 mathematics curriculum emphasizes conceptual understanding, procedural skill and fluency and application of concepts in real-world, problem-solving situations to address rigor as defined in the Missouri Learning Standards. Teachers will emphasize the use of the 8 mathematical practices outlined in the Standards to bring students to a deeper understanding of the focal points for each grade level. These eight mathematical practices, which should be embedded into math daily and are applicable for Grades K-12, are:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Course Description for Kindergarten Math

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

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

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

Elementary Math Curriculum Contributors (positions 2013-2014)

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Scope and Sequence for Kindergarten Mathematics

Qtr	Lessons	Maximum Days	Topic/Description	Domain
1	7	11 days	Topic 1: One to Five	Counting and Cardinality
1	9	13 days	Topic 2: Comparing and Ordering 0-5	
1	7	11 days	Topic 3: Six to Ten	
1-2	10	15 days	Topic 4: Comparing and Ordering 0-10 (suggest to start before break)	
2	6	9 days	Topic 5: Numbers to 20	
2	5	12 days	Topic 6: Numbers to 100	
2	7	11 days	Topic 7: Understanding Addition	Operations and Algebraic Thinking
3	8	12 days	Topic 8: Understanding Subtraction	
3	9	13 days	Topic 9: More Addition and Subtraction	
3	4	7 days	Topic 10: Composing Numbers 11-19	Numbers and Operations in Base 10
3	5	8 days	Topic 11: Decomposing Numbers 11-19	
4	8 plus 2 lessons for coin identification	13 days	Topic 12: Measurement – **including MONEY (coin identification)** (start before Spring Break)	Measurement and Data
4	7	8 days	Topic 13: Sorting, Classifying, Counting, & Categorizing Data	
4	8	8 days	Topic 14: Identifying and Describing Shapes	Geometry
4	5	7 days	Topic 15: Position and Location of Shapes	
4	5	7 days	Topic 16: Analyzing, Comparing, and Composing Shapes	
	110	**159 days**		
if time	10	10 days (as time allows)	Step-Up: Step-Up to Grade 1 Lessons	combination

To ensure all grade level standards are met, all topics must be completed. While teachers and PLCs should take into account student progress and make decisions based on their individual classes, the expectation is that all students will be taught all material in the standards/topics. If teams/teachers are struggling with pacing, they should work with their administration and content leader to develop a plan to ensure students are taught all content in their grade level.

Content Area: Math	Course: Grade K	UNIT: Counting and Cardinality
Unit Description: Numbers can be used for different purposes, and numbers can be classified and represented in different ways. Numbers, expressions, measures, and objects can be compared and related to other numbers, expressions, measures, and objects in different ways. The set of real numbers is infinite and ordered. Whole numbers, integers, and fractions are real numbers. Each real number can be associated with a unique point on the number line. The base ten numeration system is a scheme for recording numbers using digits 0-9, groups of ten, and place value. Relationships can be described and generalizations made for mathematical situations that have numbers or objects that repeat in predictable ways. Mathematics content and practices can be applied to solve problems.		**Unit Timeline:** 70-75 days

DESIRED RESULTS

Transfer Goals- *Students will be able to independently use their learning to…*
- Count and write numbers.
- Write numbers in order, draw a group with 1 fewer, and draw a group with one more.
- Count apples and bananas, draw oranges, and write the numbers that tell how many of each kind of fruit.
- Draw counters.
- Look for a pattern.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings -*Students will understand that…*
1. Counting tells how many are in a set, regardless of their arrangement or the order in which they were counted. The last number said when counting a set is the total. Counting is cumulative.
2. There is a unique symbol that goes with each number word.

3. Some problems can be solved by using objects to act out the actions in the problems.
4. If you compare two groups of objects and the number of objects match, the groups have the same number of objects. If one group has items left over, that group has more. The other group has fewer objects.
5. *1 more than* or *2 more than* expresses the relationship between two groups of objects or two numbers.
6. *1 fewer than* or *2 fewer than* expresses the relationship between two groups of objects or two numbers.
7. In a pair of numbers, the number that shows more is greater. The number that shows fewer is less.
8. Zero is a number that tells how many objects there are when there are none.
9. There is a specific order to the set of whole numbers.
10. In a growing pattern, there is a predictable and countable change from one part to the next.
11. You can use 5 and 10 as benchmarks to compare numbers.
12. Numbers can be shown by a unique point on the number line. The distance between any two consecutive whole numbers on a given number line is always the same.
13. Some problems can be solved by reasoning about conditions in the problem.
14. Numbers are counted and written in a specific sequence on a hundred chart.
15. The decade numbers are built on groups of ten. The oral names are similar but not the same as the numbers of tens counted. "Ones are in the ones' place and tens are in the tens' place."
16. Counting patterns (numerical and visual) can be seen on a hundred chart.
17. Some problems can be solved by identifying elements that repeat in a predictable way.

Essential Questions: *Students will keep considering…*
- How can numbers be counted, read, and written?
- What number would you use to show no objects, or none?
- How can numbers be compared and ordered?
- How can you use a number line to help count?
- How can you count objects that are in groups of 10?
- How can numbers to 100 be counted using a hundred chart?
- What numbers are repeated in each column as you count when using a hundred chart?
- How does counting tell how many?
- Why is the last number you say important when counting a set of objects?
- How can you tell just by looking at how many objects there are in a group?
- How can you recognize different arrangements of 2-10 objects?
- How can you find out how many objects are in a group?
- How can you estimate how many objects are in a group?
- How can you use objects to solve a problem?

- How can you tell whether a group has 1 more or 2 more?
- How does matching objects in two groups of objects help you know which group has more, fewer, or as many as the other group?
- How do you know which number is greater than another?
- How can you predict what comes next in a growing pattern?
- When you count by 2s and 10s on a hundred chart, what patterns do you see?
- How can you find a pattern to solve a problem?
- How do you know which number is greater than another?
- How can you use 5 as a benchmark to compare numbers?
- How can you tell if a number is less than 10?
- How can you find the number that is 1 or 2 *more* than another number?
- How can you find the number that is 1 or 2 *fewer* than another number?

Students Will Know…	Students Will Be Able to …	Standard
● Count: to check over one by one to get the total number ● Number: a symbol or word that shows how many ● More: in greater amount or quantity ● Fewer: a smaller number ● Same as: when two numbers or groups are exact. ● Column: items together in the same up/down (vertical) row ● Row: items together in the same line across ● As many: when one group of items has the same number of items as another group, one would say, "This group has as many as this other group." ● Greater: larger, bigger in size ● Less: a smaller number ● Zero: a number representing none ● None: not any ● Order: the sequence or arrangement of numbers ● Fewest: the lowest (smallest) amount or group of numbers ● Most: the largest (biggest) amount or group of numbers ● Growing pattern: a pattern that changes from one part to the next but in a predictable and orderly way ● Number line: looks like a row of numbers except that it is a line with evenly spaced marks and labeled with the numbers in order ● Forward: to count numbers in order, lowest to highest ● About: close to the exact number ● Hundred Chart: a chart that shows numbers 1 to 100 in order and is made up of rows and columns ● Row: numbers going across ● Column: numbers going down ● Count by 2s: counting every 2 numbers, or every other number ● Count by 10s: counting every 10 numbers	1. Count to 100 by ones and by tens 2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1) 3. Write numbers from 0-20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). 4. Understand the relationship between numbers and quantities; connect counting to cardinality. 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. 5. Understand the relationship between numbers and quantities; connect counting to cardinality. 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. 6. Understand the relationship between numbers and quantities; connect counting to cardinality. Understand that each successive number name refers to a quantity that is one larger. 7. 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. 8. 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. 9. Compare two numbers between 1 and 10 presented as written numerals.	K.CC.1 K.CC.2 K.CC.3 K.CC.4a K.CC.4b K.CC.4c K.CC.5 K.CC.6 K.CC.7

EVIDENCE of LEARNING			
Understanding	Standards	Unit Performance Assessment:	R/R Quadrant
1, 2	K.CC.3, K.CC.4a, K.CC.4b	**Formative #1: Topic 1 Performance Assessment** o **Scoring Guide:** See 3-point scoring rubric on page 20 of EnVision TE	A
2, 4, 8, 9	K.CC.2, K.CC.3, K.CC.4a, K.CC.C.6	**Formative #2: Topic 2 Performance Assessment** o **Scoring Guide:** See 3-point scoring rubric on page 44 of EnVision TE	C
1, 2	K.CC.3, K.CC.4a, K.CC.4c	**Formative #3: Topic 3 Performance Assessment** o **Scoring Guide:** See 3-point scoring rubric on page 64 of EnVision TE	A
5, 6, 7	K.CC.2, K.CC.4c, K.CC.6	**Formative #4: Topic 4 Performance Assessment** o **Scoring Guide:** See 3-point rubric on page 90 of EnVision TE	A
1, 2	K.CC.3, K.CC.5	**Formative #5: Topic 5 Performance Assessment** o **Scoring Guide:** See 3-point scoring rubric on page 64 of EnVision TE	A
14, 15, 16	K.CC.5	**Summative: Topic 6 Performance Assessment REQUIRED FOR DATA ENTRY** o **Scoring Guide:** see 3-point scoring rubric on page 124 of EnVision TE	C

		SAMPLE LEARNING PLAN		
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
<u>Understanding</u>	<u>Standards</u>	<u>Major Learning Activities:</u>	<u>Instructional Strategy:</u>	<u>R/R Quadrant</u>
1	K.CC.4b, K.CC.5, K.CC.4a	**Counting 1, 2, and 3 in Different Arrangements** 1. Set the purpose by telling students that a number describes how many objects are in a group. Tell them that the objects can be arranged in different ways, but that the number can still be the same. 2. Connect by asking students to hold up one hand showing your thumb, index fingers, and have children do the same. Have children show other arrangements of 3 fingers. 3. Pearson Realize Pose the problem: Both of these mother birds need to feed their babies. Each baby needs one worm. The mother birds need to be able to count their babies so they can get enough worms. How can we count the baby birds and find out how many worms each mother bird needs? 4. Model how the counters represent the baby birds. Change the position of the counters to show that changing the position does not change the number. 5. Have students work in small groups. Encourage students to place 1, 2, or 3 counters in different arrangements and tell how many birds are in the nest. They should check their answers by counting. 6. As students work on page 5, assist or work with small groups as necessary.	Nonlinguistic Representation Providing Practice	A
1, 2	K.CC.3, K.CC.4a	**Reading and Writing 1, 2, and 3** 1. Set the purpose by reminding children that they practice counting to 3. 2. Connect by asking children how many fingers you are holding up and counting together as a class. (Do this with 1, 2, and 3) 3. Pose the problem by having students draw one sun and asking the students how they can show the sun another way. Have students talk with their shoulder partners about possible solutions. 4. Model by using number cards. Hold up the number card for 1. Have students say the number and then place that many counters on their mat. Have students trace the number in the air with you. Repeat with the numbers 2 and three.	Nonlinguistic Representation Cooperative Learning	B

		5. Have students work in groups. Using counters, have them put counters up and then write the corresponding number. 6. As students work in small groups, encourage them to use page 7 work mat. Walk around to ensure understanding.		
1	K.CC.4b, K.CC.5	**Counting 4 and 5 in Different Arrangements** 1. Set the purpose by reminding students that they counted to 4 and 5 before. Remind them that there is more than one way to arrange 4 or 5 objects. 2. Connect by asking students if anyone has ever asked them to give them "5?" Ask them to turn to their shoulder partner and give them a "5." Explain that no one asks to give them a 2 or a 3. It's a 5 for a reason. 3. Pearson Realize Pose the problem: A beekeeper wants to count how many bees are in each of his hives but they keep moving, how can he keep track of how many bees there are? 4. Model by placing four counters diagonally (use student work mat on page 11) Have students count together to all come up with the same number. Then move the counters into a different arrangement and have students count again to see if they get the same answer. 5. Have students break up into groups. One partner will arrange counters while the other one counts. Do this with the numbers 4 and 5. Switch off which partner arranges and which partner counts. 6. As students work, walk around to make sure students are on task and counting correctly.	Nonlinguistic Representation Providing Practice	B
3, 4, 5	K.CC.6	**More, Fewer, and Same As** 1. Set the Purpose by reminding students that numbers tell how many. Today they will learn to compare groups of objects. 2. Connect by asking students notice the number of chairs in the classroom. Do we have enough for everyone? Are there any left over? How can we find out? 3. Pose the problem by pointing out that there are boys and girls in our classroom. Are there more boys or girls in our room? Have students share how they can find out. 4. Model by using yellow cubes to show girls and blue cubes to show boys. Ask students what would be the easiest way to count the boys and the girls? Have students look to see which group has more, boys or girls. How do they know?	Setting Objectives and Providing Feedback Providing Practice	C

		5. In pairs, have them complete page 23 of the student work mat. They will still need to listen to your story while working together. 6. As students work problems out, walk around to ensure understanding.		
4, 5, 6, 7	K.CC.6, K.CC.7	**Comparing Numbers Through 5** 1. Set the purpose by reminding the children that they learned how to use numbers to tell how many. Today they will learn how to compare numbers up to 5 2. Connect by having children hold up 3 fingers on one hand and 5 fingers on the other. Have them turn to their shoulder partner and talk about which one shows more (hold that hand higher) and which hand shows fewer (hold that hand lower). 3. Pose the problem: if we see 3 red ladybugs and 2 yellow ladybugs, how can we find out which number is greater? Have students turn and talk to their partner to come up with possible answers. 4. Model by showing a row of 3 red counters and a row of 2 yellow counters. Explain that the counters represent the ladybugs. Draw a line from one red counter to a yellow counter and have students do the same. Talk about what counters do not have lines (those are what is left over) 5. Students pair off to listen to additional word stories to finish their workmat. They are finding what number is greater and what number is less. 6. As students work, walk around to ensure understanding.	Setting Objectives and Providing Feedback Nonlinguistic Representations Providing Practice	C
2, 8	K.CC.3, K.CC.4a	**Reading and Writing 0** 1. Set the purpose by reminding children that they have learned how to read and write numbers 1 to 5. Today students will learn how to read and write the symbol for the number 0. 2. Connect by displaying the number cards for 1-5 in order along the ledge of the board. Have children identify the numbers. 3. Pose the problem that a student is looking for pencils but he cannot find any. How can he use a number to show no pencils, or none? Have students share their ideas first before moving on to modeling. 4. Model: Using Work Mat page 35, explain that our student found 2 crayons and that we need to represent that on our mat with counters. The student also found 1 eraser but no pencils. How would we represent those numbers with counters?	Providing Practice Cooperative Learning	A

		5. Cooperative Learning: Have students work together practicing writing numbers 0-5. Students place counters out and then write the corresponding number. 6. As students work with their partners, pull small groups as necessary.		
7, 9	K.CC.2	**Ordering Numbers 0-5** 1. Set the purpose by reminding children that they have learned about the numbers 0 to 5. Today you will learn the correct order for those numbers. 2. Connect by having students show 5 crayons on a table. Students can do this in pairs. Have them make a group with 1 fewer and then 2 fewer. 3. Pose the problem that a student would like to show the numbers 0 to 5 in the correct order. How can they do this? Have students talk about this. 4. Model by displaying number cards in order and have students say them aloud as you point to them. Show students 1 cube on the mat and have them do the same. Have a volunteer choose the #1 card. Continue this process through the number 5. 5. Students can cut out their own number cards and glue on the work mat (page 37) in order. 6. Teachers can take this opportunity to pull small groups for intervention.	Setting Objectives and Providing Feedback Nonlinguistic Representations Providing Practice	C
1, 11	K.CC.4b, K.CC.5	**Counting 8 and 9** 1. Set the purpose by reminding students that they learned about the numbers up to 7. Today they will learn to count to the number 9. 2. Connect by having students place 5 counters in a five frame and 2 more below it. Count aloud with students and point to each counter together. Move the counters onto a ten-frame (both teacher and student). Have students examine ten-frames and talk with each other about what they see. 3. Pearson Realize- Pose the problem: How can we find out how many sandwiches Lily made to take to the beach? 4. Model by taking counters and putting them into a ten-frame. Start with 8, have students use their ten-frame (page 51 on work mat). Have students count out loud. Repeat with the number 9. 5. When students break off into pairs, they can finish the work mat while listening to the word stories.	Setting Objectives and Providing Feedback Providing Practice	C
3, 17	K.CC.4c	**Problem Solving: Look for a Pattern** 1. Set the purpose: In this lesson students will learn how to solve problems by looking at growing patterns and predicting what comes next.	Cues, Questions, and Advance Organizers	A

			2. Connect by showing students ABB shape patterns such as heart, star, star, 3 times. Check for understanding by asking "what shape comes next if the pattern continues?" 3. Pose the problem: Show students a growing pattern. Ask them to talk with each other about what the continued pattern should look like. 4. Use cubes to model the pattern on student workmat, page 59. Show that you start with 1 cube and the next part of the pattern is 2 cubes. Say, "to get from 1 to 2, I added 1 more cube. Now I will look at the next two parts of the pattern. To go from 2 cubes to 3 cubes, I added 1 more cube. To go from 3 cubes to 4 cubes, I added 1 more cube. I can predict what the next part of the pattern will be by adding 1 more cube." Place 5 cubes in the empty box and ask students to predict what number of cubes comes next. 5. Have students complete the page while listening to the word stories. They should ask each other "what comes next?" and "how does this pattern grow?" 6. Teacher should walk around while checking for understanding.	Nonlinguistic Representations Providing Practice	
4	K.CC.6, K.CC.7	**Comparing Numbers Through 10** 1. Set the purpose by reminding children that they have learned that numbers tell how many. Today we will learn how to compare numbers. 2. Connect by having students hold up 3 fingers on one hand and 5 fingers on the other. Ask "which hand shows more (hold up high) and which holds less (hold low). 3. Pose the problem that your Grandmother is planting 5 red pepper plants and 7 yellow pepper plants. How can we find out which number is *greater?* 4. Model by making a row of 5 red counters (to represent the red pepper plants) and have the students do the same. Then make a row of 7 yellow counters below the 5 red counters (these will represent the 7 yellow pepper plants). Trace a line between each red and yellow counter. Ask, "Are there any counters that do not have lines?" 5. Pose a new problem for when students pair off. Repeat modeling activity with a new story problem. 6. Teacher walks around to ensure understanding or pulls a small group for intervention help.	Setting Objectives and Providing Feedback Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice Cooperative Learning	C

| 3, 4, 5 | K.CC.6, K.CC.7, K.OA.1 | **2 More**
1. Set the purpose by reminding children that they have learned how to add 1 more object to a group. Today you will learn to find numbers that are 2 more than other numbers in this lesson
2. Connect by asking students to hold up 6 fingers. Write the number 6. Then ask them to show a group of fingers with 1 more. Write the number 7.
3. Pearson Realize Pose the problem: you have 5 muffins on a plate and then add two more to the plate. How many muffins are on the plate now?
4. Model by counting aloud as you place 5 counters on the ten-frame and have students do the same on their work mats. Place 2 more counters on the frame, count on and say the number 7. Say, "We had 5 counters and added 2 more, now we have 7." Students should say "7 is two more than 5."
5. Have partners work together to complete the student page as you tell additional stories (adding two more each time) | Cues, Questions, and Advance Organizers

Nonlinguistic Representations

Providing Practice | C |
| 1 | K.CC.3, K.CC.5 | **Counting, Reading, and Writing 18, 19, and 20**
1. Set the purpose by reminding children that they have learned the numbers 16 and 17. Today they will learn the next three numbers.
2. Connect by holding up the number card for 17. Ask "what number is this? Show me 17 counters. Have one student count 1-17 while all other students count their counters.
3. Pose the problem: A student collects stickers and puts them in a book. How can she show the number of stickers she has? Have students turn and talk to their shoulder partners to discuss.
4. Model by holding up the number card for 18. Place 18 counters in the ten-frames (10 in the top frame and 8 in the bottom). After students count to ensure they have 18, have them change the arrangement of counters (8 on the top ten-frame and 10 on the bottom) and ask, "do you have the same amount of counters?"
5. With a partner do the modeling activity with the numbers 19, and 20. Ask the students what they notice about the ten-frame when they get to the number 20.
6. As students are working together, make sure that one counter is in one box in the ten-frame. | Cues, Questions, and Advance Organizers

Nonlinguistic Representations

Providing Practice

Cooperative Learning | C |

| 11 | K.CC.5 | **About How Many?**
1. Set the purpose by reminding students that they have learned to count up to 20 objects. Today they will learn how to tell about how many objects are in a group without counting each object.
2. Connect by having students count aloud from 1 to 20.
3. Pearson Realize Pose the problem: If you have 5 grapes on one tray and two groups of grapes on two other trays; how can you tell which tray has about 20 grapes on it. Give students a little while to talk about their answers.
4. Model by pointing to work mat page 111. Students can use the 5 objects that are represented to help them tell about how many are in the other pictures. Remind students that they are not **counting** each object. They are "guessing" about how many there are. Explain that 10 will look like a little more than 5 and 20 will look like more than 10.
5. Have students grab about 20 cubes and then have their partner guess how many counters they have. | Cues, Questions, and Advance Organizers

Nonlinguistic Representations

Providing Practice | A |
| 1, 11, 15, 16 | K.CC.1 | **Counting Groups of Ten**
1. Set the purpose by reminding students that they have learned to count by ones to 100. Today they will learn to count larger numbers of objects in this lesson by counting them in groups of 10.
2. Connect by holding up a picture of 2 ten-frames with 10 counters in each frame. Ask the student what number it represents and count their counters.
3. Pose the problem: students work in groups of 5. Each student has 10 cubes. How can the students find out how many cubes they have in all?
4. Model by using work mat page 115. Each student gets 10 cubes. Discussion: Hold up the numbers 10, 20, …and ask, "How many tens are in this number. Yes, we see a 2 in the ten's place. That means 2 tens." The first student places their cubes in the first line. They count the counters as a group. The next student places their cubes on the next line and they count on from 10. This process is repeated until all students have placed their counters. Students will go back up to the top and count together by 10s.
5. Students talk about what they noticed when completing the work mat. Does everyone have the same amount of cubes? If you change the placement of cubes, does it change the number?
6. Teacher pulls small group/intervention students during this time. | Cues, Questions, and Advance Organizers

Nonlinguistic Representations | A |

UNIT RESOURCES

Teacher Resources:
- **EnVision Teacher Manual**
- **Pearson Realize**
- **Manipulative kits**

Student Resources:
- EnVision Work Mats

Vocabulary:
- Count: to check over one by one to get the total number
- Number: a symbol or word that shows how many
- More: in greater amount or quantity
- Fewer: a smaller number
- Same as: when two numbers or groups are exact.
- Column: items together in the same up/down (vertical) row
- Row: items together in the same line across
- As many: when one group of items has the same number of items as another group, one would say, "This group has as many as this other group."
- Greater: larger, bigger in size
- Less: a smaller number
- Zero: a number representing none
- None: not any
- Order: the sequence or arrangement of numbers
- Fewest: the lowest (smallest) amount or group of numbers
- Most: the largest (biggest) amount or group of numbers
- Growing pattern: a pattern that changes from one part to the next but in a predictable and orderly way
- Number line: looks like a row of numbers except that it is a line with evenly spaced marks and labeled with the numbers in order
- Forward: to count numbers in order, lowest to highest
- About: close to the exact number
- Hundred Chart: a chart that shows numbers 1 to 100 in order and is made up of rows and columns
- Row: numbers going across
- Column: numbers going down
- Count by 2s: counting every 2 numbers, or every other number
- Count by 10s: counting every 10 numbers

Content Area: Math	Course: Kindergarten	UNIT: Operations and Algebraic Thinking
Unit Description: There are multiple interpretations of addition, subtraction, multiplication, and division of rational numbers, and each operation is related to other operations. Any number, measure, numerical expression, or equation can be represented in an infinite number of ways that have the same value. Mathematics content and practices can be applied to solve problems.		**Unit Timeline:** 30- 35 days

DESIRED RESULTS

Transfer Goals- *Students will be able to independently use their learning to…*
- Solve problems about joining two groups.
- Children complete subtraction sentences.
- Create a graph to represent a set of objects and then use the graph to answer a question.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings– *Students will understand that…*
1. Joining parts to make a whole is one interpretation of addition.
2. Joining groups can be shown in an addition expression that uses the plus sign (+).
3. Information in a problem can often be shown using a picture or diagram and used to understand and solve the problem.
4. Separating parts from a whole is one interpretation of subtraction.
5. Taking part of a group away is one interpretation of subtraction.
6. Separating, take away, and comparison situations subtraction situations can be shown in a subtraction expression that uses the minus sign (-).
7. Subtraction number sentences using – and = can be used to show subtraction situations.
8. Some problems can be solved by using objects to act out the actions in the problem.
9. There is more than one way to show a number.
10. Joining parts to make a whole is one interpretation of addition. Addition number sentences using + and = can be used to show parts of a whole.
11. Some problems can be solved by making, reading, and analyzing a graph.

Essential Questions: *Students will keep considering…*
- How can numbers be counted, read, and written?
- How does moving two groups of objects together help you know how many objects there are in all?
- What do you find out when you join two groups, or two parts of a whole?
- What symbol can you write to show joining two groups?
- What symbols can you write to show adding two groups and finding the sum?
- What information does an addition sentence tell you?
- What do you draw to solve a problem about joining groups?
- What types of situations involve subtraction?
- How does moving an object, or objects, to the side of a group of objects help you know how many objects are left?
- How can you act out a number story about things taken away?
- What symbol can you write to show separating a part of a group from the whole group?
- What symbol can you write in a number sentence to show balance?
- What information does a number sentence tell you?
- How can you use counters to solve a problem?
- What are the different ways to make a number? How can you show the same number of objects in different ways?
- How can number sentences represent part-part-whole relationships?
- How do you use a graph to solve a problem?

Students Will Know…	Students Will Be Able to …	Standard
- Number Story: ways to use numbers in real life - Join: put different groups together - Plus sign: + point to on the lesson work page - Addition sentence: a sentence that uses the plus sign and the equal sign to show joining - Left: remain - Separate: move away - Subtraction sentence: a sentence that uses the minus sign and the equal sign to show separating - Minus sign: - point to on the lesson work page - Whole: not divided into parts - Part: objects or pieces to make a whole - Graph: a kind of drawing that shows the number of things to be counted	1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations. 2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. 3. Fluently add and subtract within 5. 4. 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. 5. 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. 6. 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. 7. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	K.OA.1 K.OA.2 K.OA.5 K.CC.6 K.OA.3 K.OA.4 K.MD.3

		EVIDENCE of LEARNING	
Understanding	Standards	**Unit Performance Assessment**:	**R/R Quadrant**
1,2	K.OA.1; K.OA.2	**Formative #1: Quick Check 7-3, #2**	A
		● Scoring Guide: see 3-point scoring rubric on page 132B of EnVision TE	
1, 2, 3	K.OA.2	**Formative #3: Quick Check 8-4, #2**	A
		● Scoring Guide: see 3-point scoring rubric on page 154B of EnVision TE	
1, 2, 3	K.OA.2; K.OA.5; K.OA.3	**Formative #4: Quick Check 8-6, #2**	A
		● Scoring Guide: see 3-point scoring rubric on page 158B of EnVision TE	
2, 4, 9	K.OA.3	**Formative #1: Quick Check 9-3, #2**	A
		● Scoring Guide: see 3-point scoring rubric on page 174B of EnVision TE	
1, 2, 9, 10	K.OA.1; K.OA.4	**Summative: Topic 9 Performance Task**	B
		● Scoring Guide: see 3-point scoring rubric on page 190 of EnVision TE	

		SAMPLE LEARNING PLAN		
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**
1, 2	K.OA.1	Joining Groups 1. Set the purpose by writing numbers for each of the two groups and then write how many there are altogether. 2. Connect by drawing two groups of stick figures on the board, 2 in one group and 2 in the other group. Have children complete the sentence "____ and ____ is ____ in all." 3. Explain the academic vocabulary. Tell the children that the word altogether means "in all." 4. Pearson Realize- Pose the problem: There is 1 fishing boat on the lake. Then 2 more fishing boats go out onto the lake. How many boats are there altogether on the lake? 5. Model how to use counters to show the addition sentence. Point out the first sentence on the mat and trace the numbers together. Repeat with other groups of boats on the lake.	Cues, Questions, and Advance Organizers Providing Practice	A

		6. Develop the concept by showing the interactive learning video. Afterwards students may work together with the teacher to complete page 132. Teachers may work with small groups as needed.		
5, 7	K.OA.1	**Stories About Take Away** 1. Set the purpose by explaining students will learn how to find many objects are left when some objects in a group are taken away. 2. Connect by asking 7 students to stand in the front of the class. Ask how many children are standing. Ask 3 to sit down. How many children are left standing (4). 3. Explain the academic vocabulary. Display 6 books. Then take away 2 books. Explain to children that the term "take away" is used in a number story to describe when part of a group is separated from the whole group. 4. Pearson Realize- Pose the problem: Danny sees 4 turtles in the pond. One turtle swims away. How many turtles are left? 5. Model how to use counters to show the subtraction sentence. Point out the first sentence on the mat and trace the numbers together. Repeat with other groups of animals at the pond. 6. Develop the concept by showing the interactive learning video. Afterwards students may work together with the teacher to complete page 150. Teachers may work with small groups as needed.	Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice	A
1, 2, 3	K.OA.1	**Writing Number Sentences for 4 and 5** 1. Set the purpose by reminding children that they have been making the number quantities of 4 and 5. Now you are going to write number sentences to describe the parts of 4 and 5. 2. Connect by showing 5 counters. Write the numeral 5 on the board. How can these five counters be separated into two parts? As students name two parts for five, write the numerals on the board by the numeral 5. Let's talk about writing a number sentence to describe what we just did. 3. Pose the problem: Five children were playing outside. Three went inside the tree house and two stayed outside. How can you write a number sentence to describe what happened? Invite students to work in pairs with counters and their work mat. 4. Model how to use counters to show the addition sentence. Point out the first sentence on the mat and trace the numbers together. Repeat using another story for addition. 5. Develop the concept by showing the interactive learning video. After students may work together with the teacher to complete page 172. Teachers may work with small groups as needed.	Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice Cooperative Learning	A

UNIT RESOURCES
Teacher Resources: ● **EnVision Teacher Manual** ● **Pearson Realize** ● **Manipulative kit**
Student Resources: ● EnVision Student Book
Vocabulary: ● Number Story: ways to use numbers in real life ● Join: put different groups together ● Plus sign: + point to on the lesson work page ● Addition sentence: a sentence that uses the plus sign and the equal sign to show joining ● Left: remain ● Separate: move away ● Subtraction sentence: a sentence that uses the minus sign and the equal sign to show separating ● Minus sign: - point to on the lesson work page ● Whole: not divided into parts ● Part: objects or pieces to make a whole ● Graph: a kind of drawing that shows the number of things to be counted

Content Area: Math	Course: Kindergarten	UNIT: Numbers and Operations in Base 10
Unit Description To understand teen numbers, children need to be able to think about a number such as 16 as the sum of two other numbers. That is, they need to be comfortable with composing and decomposing numbers. To compose numbers is to join two numbers to make a single number with the same value. To compose 12, for example, children can write the number sentence 10+2= 12. To decompose a number is to take it apart to make two numbers with the same total value. The number sentence 13=10+3 shows one way to decompose 13. For the numbers 11 through 19, which are studied in this topic, children are asked to compose and decompose using 10 as one of the addends.		**Unit Timeline:** 13-15 days

DESIRED RESULTS

Transfer Goals- *Students will be able to independently use their learning to…*
- Choose a number from 11-19 and then represent it by using ten-frames and by using a number sentence.
- Write an addition number sentence to match counters shown in a double ten-frame. Then children draw counters in a double ten-frame and complete a number sentence to match what they drew.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings *Students will understand that…*
1. Numbers from 11-19 can be represented as the sum of 10 and some more. 10-1, 10-2, 10-3
2. Patterns on the hundreds chart can be represented using number sentences and drawings. 10-4
3. There is more than one way to show a number. 11-1
4. The numbers 11, 12, and 13 can be decomposed as the sum of ten and some ones. The number 11 is decomposed to the sum of 10+1, the number 12 is decomposed as 10+2, and the number 13 is decomposed to 10+3. 11-2
5. The numbers 14, 15, and 16 can be decomposed as the sum of ten and some ones. The number 14 is decomposed to 10+4, the number 15 is decomposed to 10+5, and the number 16 is decomposed to 10+6. 11-3

6. The numbers 17, 18, and 19 can be decomposed as a ten and some ones. The number 17 is decomposed to 10+7, the number 18 is decomposed to 10+8, and the number 19 is decomposed to 10+9. 11-4

Essential Questions: *Students will keep considering…*
- How can you add 1 ten and some ones to make the numbers 11 to 19?
- How can the parts of a number be represented as a number sentence?
- How can the parts of a number be represented as a drawing or as a number sentence with 10 as one of the parts?
- What patterns are there on the first two rows of the hundred chart, and how can the patterns be represented?
- How can we break the numbers 11-19 into parts?
- What strategies can you use to find the number of objects in a set greater than 10?
- How can 11, 12, and 13 be broken apart into ten ones and some more ones using a drawing and a number sentence?
- How can the parts of 14, 15, and 16 be represented as 10 ones, or one ten and some more ones?
- How can the parts of 17, 18, and 19 be represented as a drawing and an equation using one ten and some more ones?
- What patterns can be identified and extended to decompose numbers 11 to 19 into ten and ones

Students Will Know…	Students Will Be Able to …	Standard
● Set: a group of objects that belong together ● Double tens frame: just like a ten-frame. Used to show numbers greater than 10.	1. Compose and decompose numbers from 11-19 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.	K.NBT.1

EVIDENCE of LEARNING

Understanding	Standards	Formative #1: Topic 10 Performance Assessment	R/R Quadrant
1,2	K.NTB.1	o **Scoring Guide:** see page 204 of EnVision TE	A
3,5,6	K.NBT.1	**Summative Assessment REQUIRED FOR DATA ENTRY**: **Topic 11 Performance Task** o **Scoring Guide:** see 3-point scoring rubric on page 220 of EnVision TE	C

SAMPLE LEARNING PLAN

Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.

Understanding	Standards	Major Learning Activities:	Instructional Strategy:	R/R Quadrant
1,3	K.NTB.1	**Making 11, 12, and 13** 1. Set the purpose by reminding children that they have been writing number sentences for numbers 10 and less. "Today, we will be counting more than 10 objects and learning how to write a number sentence that tells how many". 2. Connect by showing the filled ten-frame. Write the number sentence 10 + ____ = ____ on the board. "The 10 at the beginning tells how many are shown on the ten-frame. Are there any extra counters, or are there just 10?" (just 10) Write 0 in the first blank. "The 0 shows that there are zero extra counters. We have 10 counters and zero extras. How many in all?"(10) Complete the number sentence:10 + 0 = 10. "What does this number	Setting Objectives and Providing Feedback Cues, Questions, and Advance Organizers	A

			sentence mean?" (There are ten counters on the ten frame and zero extras, so there are 10 in all. 10 added to 0 equals 10.) 3. Pose the problem: "Keith wants to write a number sentence to describe how many counters are in each bag. He also wants to use a ten frame so he can find out how many without counting. How can he write a number sentence that begins with 10 as one part?" 4. Small-Group Interaction: Partners select one of the three bags and empty it on their workmat. They fill up the ten-frame and then should notice that they have extras. Have them work on the number sentence that fits the number of counters in each bag. While children are working, ask: "What does the number 10 mean in this number sentence?"(How many counters on the ten frame) "Why is the number 10 the same color as the ten frame?"(they both represent 10, one using a number and the other using a drawing.) "What does the number after the plus sign represent? (the number of extra counters; the number of counters more than 10). "What does the number after the equal sign mean?" (the total number of counters in the bag0 Have children repeat with the other two bags. 5. Model and Share: Ask pairs to model how they wrote number sentences to describe the content in their bags. "Describe the number 13."(Ten and three more) "Which number is 10 and 2 more?(12) Describe the number 11.(ten and one more). 6. Use drawings: Ask children to select 11, 12, or 13 and make a drawing to represent the number using a ten frame as part of the drawing. 7. Visual Learning: students will view the visual learning component on Pearson Realize. 8. Guided practice: teacher will guide students through the guided practice section on the work mat. 9. As students work on the independent practice section of the work mat, teachers will assist or work with small groups as necessary.	Nonlinguistic Representations Providing Practice Cooperative Learning	
3,6	K.NTBA.1	**Creating Sets to 19** 1. Set the purpose by reminding children that they have learned how to find the number of objects in a set. "You will use counters and ten-frames to help you find numbers greater than 10 in different ways in this lesson.	Setting Objectives and Providing Feedback	B

		2. Connect by holding up both of your hands with all of your fingers extended. "How many fingers am I holding up?")10_ Ask a child to stand next to you and extend 9 fingers. "How many fingers are we holding up in all?" (19) 3. Pose the problem: "Hannah wants to make a set of 17. How can she make a set of 17 counters?" Have children share their ideas. 4. Model: Hold up the number card for 17 and then place it in the box next to the double ten-frame. Place 10 counters in the top ten-frame and have children do the same. "How many counters are there?" (10) "How do you know?" (the ten-frame is filled.) Place 7 counters in the bottom ten-frame and have children do the same. "How many counters did you place in the bottom ten-frame?"(7) "How many counters are there in all?"(17). "How do you know that your set shows 17?"(possible responses: I counted them; I made 10, then counted 11, 12, 13, 14, 15, 16, 17; I filled up 1 ten-frame and then added 7 more counters.) "Remember what we learned about number sentences. How can we write the set of 17 as a number sentence using the number 10?"(10 and 7 is 17) "What numbers would we write if we counted on from 10 to 17?"(11,12,13,14,15, 16, 17) Encourage children to use 10 as a benchmark by either saying a number sentence or counting on from 10. Have children repeat the process for the number 18. 5. Small-Group Interaction: "Show me 13 counters. How do you know there are 13?"(possible response: I made 10, then counted 11, 12, 13.) Have children glue the number card for 13 in the box and draw 13 counters in the double ten-frame. 6. Visual Learning: children will view the visual learning activity on Pearson Realize. 7. Guided practice: Teacher will guide students through the guided practice section of the work mat. 8. Independent Practice: as students complete the independent practice section of the work mat, the teacher will assist or work with small groups as necessary.	Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice Cooperative Learning	

UNIT RESOURCES
Teacher Resources:

- **EnVision Teacher Manual**

● **Pearson Realize**
● **Manipulative kit**
Student Resources:
● EnVision Student Book
Vocabulary:
● Set
● Double ten-frame

Content Area: Math	Course: Kindergarten	UNIT: Geometry
Unit Description: Two- and three-dimensional objects with or without curved surfaces can be described, classified, and analyzed by their attributes. An object's location in space can be described quantitatively. Mathematics content and practices can be applied to solve problems. Doing mathematics involves a variety of processes including problem solving, reasoning, communicating, connecting and representing. Numbers, expressions, measures, and objects can be compared and related to other numbers, expressions, measures, and objects in different ways.		**Unit Timeline:** 18-22 days

DESIRED RESULTS

Transfer Goals- *Students will be able to independently use their learning to…*
- Children will identify 2 Dimensional shapes.
- Students will identify above, below, left and right.
- Children will identify solid figures.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings: *Students will understand that…*
1. A rectangle has four sides and four corners.
2. A square has four sides and four corners. All the sides of a square are the same length.
3. A circle is round and does not have any corners.
4. All triangles have three sides but can have different configurations of sides and angles.
5. A hexagon is a shape with six sides and six corners.

6. Three dimensional or solid figures have length, width, and height. Many everyday objects closely approximate standard geometric solids.
7. Flat surfaces of many solid figures have specific shapes.
8. Some problems can be solved by using objects to act out the actions in the problem.
9. The position of objects can be determined in relation to surrounding objects and described using words.
10. Some problems can be solved by using objects to act out the actions in the problem.
11. Two dimensional shapes can be classified by their defining attributes, specifically the number of sides and/or the number of corners.
12. Shapes can be combined to make other shapes.
13. Solid figures can be compared in different ways. Some solid figures can be compared by their flat surfaces(faces) and vertices (corners).
14. Some figures can be combined to make other solid figures.
15. Some problems can be solved by reasoning about conditions in the problem.

Essential Questions: *Students will keep considering…*
- How can shapes be named and described?
- How can you tell if a shape is a rectangle., square, circle, triangle, or hexagon?
- What do you look for when you describe and match shapes?
- How can you describe the flat surfaces of solids?
- How can you use objects to solve a problem?
- What words can be used to describe the position and location of shapes?
- How can you describe where something is using the words *inside, outside, above, below, on, in front of, behind, next to,* or *beside?*
- How can you use the words *left* and *right* to describe where something is?
- How can acting out a problem help you solve it?
- How can shapes be created, described, compared or composed?
- How do you make shapes from various materials?
- How do you use smaller shapes to make a larger shape?
- How are the sphere, cube, cylinder and cone alike? How are they different?
- What three dimensional shapes can you make using solid figures?
- How can you identify a shape based on clues about its attributes?

Students Will Know…	Students Will Be Able to …	Standard
● Circle: is round and has no corners ● Square: a shape with four equal size sides ● Triangle: a shape with three sides and three corners ● Rectangle: a shape with two long sides and two short sides ● Cube: a box shaped solid object that has six identical square sides ● Cone: has a flat side and a curved side ● Inside: within a specific area ● Outside: not in a specific area ● Above: over ● Below: under ● Left: opposite of right ● Right: opposite of left ● Stack: to put one object on top of another object ● Slide: to move a shape without rotating it or flipping it. The shape still looks exactly the same but is in a different place.	1. Describe the 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.* 2. Correctly name shapes regardless of their orientations or overall size. 3. Identify shapes as two dimensional (lying in a plane, "flat") or three dimensional ("solid"). 4. Analyze and compare two and three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes. 5. Model shapes in the world by building shapes from components and drawing shapes. 6. Compose simple shapes to form larger shapes.	K.G.1 K.G.2 K.G.3 K.G.4 K.G.5 K.G.6

EVIDENCE of LEARNING

Understanding	Standards		R/R Quadrant
1,2,3,4,5	K.G.1 K.G.2	**Formative Assessment #1:** Topic 14 Performance Assessment ○ **Scoring Guide:** see 3-point scoring rubric on page 284 of EnVision TE	B
6,9	K.G.2 K.G.4	**Formative Assessments #2:** Topic 15 Performance Assessment ○ **Scoring Guide:** see 3-point scoring rubric on page 300 of EnVision	C
6,9	K.G.2 K.G.4	**Summative Assessment:** Topic 16 Performance Assessment ○ **Scoring Guide:** see 3-point scoring rubric on page 316 of EnVision	B

SAMPLE LEARNING PLAN

Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.

Understanding	Standards	Major Learning Activities:	Instructional Strategy:	R/R Quadrant
1	K.G.1 K.G.2	**How to tell if a shape is a rectangle.** 1. Set the purpose by reminding children that objects can be sorted by shape. Today they will learn about a shape called a rectangle. 2. Connect by holding up 4 fingers and ask how many fingers am I holding up. 3. Pose the problem: Lin's mother is buying a shade for a window in Lin's room. Draw a rectangular window on the chalkboard. How will she figure out the shape of the window? 4. Model by distributing paper shapes to the students. Hold up a large rectangular paper shape and have the children do the same. 5. Ask questions such as Is this a rectangle? How many sides does a rectangle have? Are all of the sides the same length? How many corners does it have? Point to the opposite sides and tell them that these opposite sides are the same length. Point to the other opposite sides and tell the students that these sides are the same length.	Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice	A

			6. Place the rectangle on the left side of the workmat and have the children find the large rectangle and ask how they know it's a rectangle. Continue with various size rectangles and discuss attributes. 7. Students will participate with the Visual Learning aspect of the lesson on Pearson Realize. 8. Children will work with the teacher to complete the guided practice section of their workmat. 9. As students work on Independent practice, the teacher will assist or work with small groups as necessary.		
9		K.G.1	**In Front of or Behind** 1. Set the purpose by telling children that they can describe where an object,person, shape, or animal is by using special words. 2. Connect by calling on volunteers to use the words in front of and behind in their own sentences. 3. Pearson Realize- Pose the problem: "Connie needs to feed the animals on her family's farm. How can she find the animals to feed first?" Have children share their ideas about the locations of the animals relative to the barn on the page. 4. Model by pointing out the animals. "The animals that will eat first are the ones in front of the other animals. Which animals are in front?"pig, chicken, cow) Point to the barn. "We can use the words next to and beside to describe where the animals closest to the barn are standing. Which animals are next to, or beside, the barn?"(the pig and dog) 5. Use role playing and have the children role-play situations involving in front of and behind in the classroom to make sure they understand the concepts presented. 6. Small-group Interaction: Have pairs of children work together to complete the student page as you give directions. "Point to the barn. Mark an x on the animals that are in front of other animals. Point to the barn. Color the animal that is next to, or beside, the barn." 7. Visual Learning: Students will participate in the visual learning lesson on Pearson Realize. 8. Children will work with the teacher to complete the guided practice section of their workmat.	Cues, Questions, and Advance Organizers Nonlinguistic Representations Providing Practice	A

		9. As students work on Independent practice, teachers will assist or work with small groups as necessary.		
12,13,14,15	K.G.4 K.G.6	**Making Shapes from Other Shapes** 1. Set the purpose by reminding the children that they have learned about shapes. "You will use blocks to find out how to make new shapes in this lesson." 2. Connect by displaying a classroom puzzle with large pieces. Take it apart. "How do I know what shapes fit? What happens when I put the puzzle pieces back together?" 3. Pose the problem: Direct children's attention to the hexagon in the pond on the left side of the workmat. "Mrs. Harris wants to use smaller shapes to make this island in her pond." Hold up a red trapezoid pattern block. "How can she figure out how many of this shape to use?" Have children share their ideas before modeling the solution. 4. Model and Demonstrate: Display a set of pattern blocks. Ask children which shape matches the top shape on the left side of the workmat. Hold up a hexagon and ask children to do the same. Place this shape in the outline on the left side of the workmat. "Does this shape match?"(yes) Then ask children to find the block that matches the shape at the bottom. "How can we figure out how to cover the yellow shape with red shapes?"(put the red pattern blocks on the yellow block) Have children cover the yellow shape. Demonstrate how to place the red blocks on the yellow block without gaps or overlap. "How many red blocks did we use? (2) It takes 2 red shapes to make the yellow shape. Draw a line on the shape on the left side to show that we used 2 pattern blocks to cover the shape." Repeat the process using triangle pattern blocks. "How many triangles did we use to cover the right shape? (6) "Draw lines on the shape on the right side to show that we used 6 green pattern blocks to cover the shape." 5. Peer Questioning: As children make new shapes, have them question each other about the number of shapes that they are using. Encourage children to describe the attributes of the shapes. 6. Visual Learning: Students will participate in the visual learning activity on Pearson Realize.	Setting Objectives and Providing Feedback Providing Practice Cooperative Learning	C

		7. Children will work with the teacher to complete the guided practice section of the workmat. 8. As students work on the independent practice, the teacher will assist or work with small groups as necessary.		

UNIT RESOURCES

Teacher Resources:
- **EnVision Teacher Manual**
- **Pearson Realize**
- **Manipulative kit**

Student Resources:
- EnVision Student Book

Vocabulary:
- Circle: is round and has no corners
- Square: a shape with four equal size sides
- Triangle: a shape with three sides and three corners
- Rectangle: a shape with two long sides and two short sides
- Cube: a box shaped solid object that has six identical square sides
- Cone: has a flat side and a curved side
- Inside: within a specific area
- Outside: not in a specific area
- Above: over
- Below: under
- Left: opposite of right
- Right: opposite of left
- Stack: to put one object on top of another object
- Slide: to move a shape without rotating it or flipping it. The shape still looks exactly the same but is in a different place.

Content Area: Math	Course: Grade K	UNIT: Measurement and Data
Unit Description: Comparison and Relationships: Numbers, expressions, measures, and objects can be compared and related to other numbers, expressions, measures, and objects in different ways. Practices, Processes, and Proficiencies: Mathematics content and practices can be applied to solve problems. Geometric Figures: Two- and three-dimensional objects with or without curved surfaces can be described, classified, and analyzed by their attributes. Data Collection and Representation: Some questions can be answered by collecting and analyzing data, and the quest to be answered determines the data that needs to be collected and how best to collect it. Data can be represented visually using tables, charts, and graphs. The type of data determines the best choice of visual representation.		**Unit Timeline:** 15-18 days

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DESIRED RESULTS

Transfer Goals- *Students will be able to independently use their learning to…*
- Draw pictures to demonstrate their ability to compare objects of different size or weight.
- Look at shapes and their attributes and decide how they can be sorted.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings -*Students will understand that…*

1. Objects have measurable attributes such as length, capacity, and weight that can be compared and described.
2. Objects can be compared by length.
3. Objects can be compared by height. Comparing by height is similar to comparing by length.
4. Objects can be compared by capacity.

5. Objects can be compared by weight.

6. Some problems can be solved by making a reasoned first try for what the answer might be and then, through additional reasoning, arrive at the correct answer.

7. Attributes can be used to compare and sort objects.

9. Attributes such as color, shape, or size can be used to sort the same set of objects in different ways.

10. Some problems can be solved by reasoning about conditions in the problem.

11. Data can be collected and represented using different types of graphs. Graphs can be used to answer questions.

Essential Questions: *Students will keep considering…*
- How can objects be compared and ordered by length, height, and weight?
- What words tell how long objects are?
- How can you compare the lengths of three objects?
- How can you make a good guess to try to solve a problem?
- What words tell how tall objects are?
- How can you compare the height of three objects?
- How can you tell if a container holds the same, more, or less than another?
- How can you compare the weights of two objects?
- What are different ways objects can be grouped?
- What does looking at the color, shape, and size of objects help you know about them?
- What are some ways you can sort objects?
- How does looking at colors and shapes of objects in a set help you sort them in two ways?
- In order to make a group of objects that are exactly alike in two ways, what should you notice about the objects?
- How can you use what you know to solve a problem?
- How does making and reading a real graph help you answer questions?
- How does making a graph with pictures help you answer questions?

Students Will Know…	Students Will Be Able to …	Standard
- Length: how long something is - Shorter: not as long as another object - Longer: greater in length than another object - As long as: having the same length as another object - Longest: the object having the greatest length - Shortest: the object having the smallest length - Height: how tall or short an object is - Taller: having greater height than another object - As tall as: having the same height as another object - Tallest: having the greatest height when three or more objects are compared - Holds more: having a greater capacity than another container - Holds less: having less capacity than another container - Empty: containing nothing - Full: containing maximum capacity - Most: comparing which object has the greatest capacity - Least: comparing which object has the smallest capacity - Weight: how heavy or light an object is - Lighter: having less weight than another object - Weighs less: not as heavy as another object - Heavier: weighs more than another object - Weights more: heavier than another object - About the same: objects have the same weight - Balance scale: a tool used to compare the weights of two objects - Same: objects that are alike - Different: objects that are not exactly alike - Sort: put things that are alike in some way in the same group - Does not belong: something that is different; do not put it in the group - Sorting rule: a rule that tells us how to sort a group of objects - Real graph: a graph with real objects on it - Picture graph: a graph that uses pictures instead of real objects to find out whether a group has more or fewer	1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. 2. Directly compare two objects with a measurable attribute in common, to see which object is "more of"/"less of" the attribute, and describe the difference. 3. Classify objects into given categories: count the numbers of objects in each category and sort the categories by count.	K.MD.1 K.MD.2 K.MD.3

EVIDENCE of LEARNING			
Understanding	Standards	Assessments:	R/R Quadrant
1, 2, 3, 5	K.MD.2	**Formative #1: Quick Check 12-8** ● Scoring Guide: see 3-point scoring rubric on page 238B of EnVision TE	B
7, 8, 9	K.MD.3	**Formative #1: Quick Check 13-5** ● Scoring Guide: see 3-point scoring rubric on page 254B of EnVision TE	B
1, 2, 5	K.MD.2	**Summative: Topic 12 Performance Task** ● **Scoring Guide:** see 3-point scoring rubric on page 242 of EnVision TE	
			C
7, 8, 9	K.MD.3	**Summative: Topic 13 Performance Task** ● **Scoring Guide:** see 3-point scoring rubric on page 262 of EnVision TE	
			B

SAMPLE LEARNING PLAN				
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**
1, 2	K.MD.2	**Problem Solving: Try, Check, and Revise** 1. Set the purpose by reminding students that they have learned about comparing and ordering by length. Tell students they will learn how to solve problems about ordering from shortest to longest in this lesson. 2. Connect by having students look at their feet. Have them look at their hands. Which are longer, your feet or your hands? 3. Pose the problem: Ken has 3 pieces of yarn. He wants to put them in order from shortest to longest. Which is the shortest? Which one is the longest? How can he solve this problem? Have students share their ideas before modeling the solution. 4. Model by taping 3 pieces of yarn to chart paper in random order. Write 1 through 3 on the paper. Tell students first I want to find the shortest piece of yarn. Look at the 3 pieces. Which is the shortest? Call a volunteer to pull off the shortest. Help them tape the yarn to the number one. Repeat with the other pieces of yarn. 5. Develop the concept by showing the interactive learning video. Afterwards students may work together with the teacher to complete page 230. Teachers may work with small groups as needed.	Nonlinguistic Representations Providing Practice Cooperative Learning	A
7, 8	K.MD.1 K.MD.2	**Sorting by More Than One Attribute** 1. Set the purpose by reminding students that they have learned how to sort objects in different ways. Tell students they will learn how to sort objects that are alike in two ways. 2. Connect by having students hold up a red paper square and a red paper triangle. Are these shapes the same or different? How are the shapes the same? 3. Pearson Realize Pose the problem: Quilly puts 3 yellow shapes and 3 blue shapes on a rug. She wants to make a group of blocks that are exactly the same in two ways. How could she sort the blocks? Have students share ideas about how they could sort the blocks. 4. Model by using 3 large yellow squares and 3 large blue rectangular attribute blocks. Say, let's sort by shape. I'll put the blue shapes into one group. These are large shapes. They are all the same shape. Put the yellow shapes into another group. These are large shapes. They are all the same. Have students work together to make the same groups with their paper shapes by putting all of the same shapes together. Walk around and see if groups are putting the same shape and color into a group.	Setting Objectives and Providing Feedback Nonlinguistic Representations Providing Practice	A

		5. Develop the concept by showing the interactive learning video. After students may work together with the teacher to complete page 252. Teachers may work with small groups as needed.		

UNIT RESOURCES

Teacher Resources:
- **EnVision Teacher Manual**
- **Pearson Realize**
- **Manipulative kit**

Student Resources:
- EnVision Student Book

Vocabulary:
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- About the same: objects have the same weight
- Balance scale: a tool used to compare the weights of two objects
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