FCPS 2023-2024 Math Unit 3 Framework

Unit 1 Unit 2 Unit 3 Unit 4

KY Math Standard (link) FCPS	Kindergarten Trajectory	<u>K Unit 3 Google Link</u>	Priority Content (link)
Unit Title: How Many Now? Let's Compare!	Estimated	Time Frame: <u>35 - 41</u> da	ys
Essential Standards: K.CC.1, K.CC.2, K.CC.3, K.CC.4, K.CC.5,K.CC.6	6, K.CC.7, K.OA.1, K.OA.2, K.OA.3, K.OA.4	, K.OA.5, K.NBT.1, K.G.3, K.G.4, K.G.5 Supporti	ng Standards: K.MD.3, K.G.1, K.G.2, K.G.6
Big Idea(s) <u>CRA explanations for Kinderga</u>	<mark>ırten Unit 3</mark>		
NUMBER, STRUCTURE, & QUANTITY: Numbers have a specific order (forward & backward) and value. Numbers can be structured (composed & decomposed) in many ways. SHAPES: Identify and describe 2D and 3D shapes (attributes; sides, corners, name)			
Essential Questions:	Common	Misconceptions:	
How can I make bigger numbers using smaller How can I describe a 3D shape? How many ways can I count? How can I model shapes from the real world?	orientation top. Some non-tradition	shapes- Be sure shapes are s such as the vertex of a trian e students may have difficulty onal orientation. When this ha until it looks like a traditional s	gle not always being at the identifying a shape with a appens, have the student turn

Standards for Mathematical Practice (bolded practices are emphasized in this unit)	Kentucky Interdisciplinary Literacy Practices	
 MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics. MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning. 	 Recognize that text is anything that communicates a message. Employ, develop, and refine schema to understand and create text. View literacy experiences as transactional, interdisciplinary and transformational. Utilize receptive and expressive language arts to better understan self, others, and the world. Apply strategic practices, with scaffolding and then independently to approach new literacy tasks. Collaborate with others to create new meaning. Utilize digital resources to learn and share with others. Engage in specialized, discipline specific literacy practices. Apply high level cognitive processes to think deeply and critically about text. Develop a literacy identity that promotes lifelong learning. 	
Essential Standards: KAS Content Standards <u>CRA explanations for Kindergarten Unit 3</u>	Prerequisite Skills & Essential Vocabulary	Sample Learning Intentions* & Sample Success Criteria*
 KY.K.CC.1 Count a. Count to 100 by ones and by tens. b. Count backwards from 30 by ones. Students verbally count forward by ones (1,2,3,4) to 100 Students verbally count forward by tens (10, 20, 30) to 100. Students verbally count backwards by ones (30, 29, 28, 27) from 30. Coherence KY.K.CC.1→KY.1.NBT.1 	 number numeral forward backward tens 	I am learning to count forward and backward within 100. I know I am successful when I can • count forward to 70. • Count forward to 100 by tens. • count backward from 20.

END OF UNIT GOAL: count to 70 by ones, count to 100 by tens, count from 20 by ones.		
KY.K.CC.2 Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1). Students verbally count forward starting at a number other than one (58, 59, 60, 61, 62) within 100. Coherence KY.K.CC.2 \rightarrow KY.1.NBT.1 <u>END OF UNIT GOAL</u> : count within 50 by ones from any number forward, count within 15 from any number backward, name number before & number after within 15.	 forward backward count quantity 	 I am learning the verbal number sequences within 50. I know I am successful when I can count forward from a given number within 50. count backward from a given number within 15. name a number before and after a given number within 15.
 KY.K.CC.3 Represent numbers. a. Write numbers from 0 to 20. b. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5) When students are given a written numeral, represent with objects within 20 (4 ★ ★ ★ ★). Coherence KY.K.CC.3→KY.1.NBT.1 END OF UNIT GOAL: identify numbers to 20, writer numbers to 15, match numeral to objects to 15. 	• numeral	I am learning to write numbers to tell "how many." I know I am successful when I can identify numerals 0-20. write numerals 0-15. write a numeral to match a group of objects up to 15.

 KY.K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. (see corresponding notes below) 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. Students understand each object being counted is given only one number name and this naming occurs in the correct sequence (one, two, three, four). Once students conclude counting a group of objects in different arrangements, the student correctly identifies the amount of objects in that group (rather than recounting the group). Students verbally count by ones, connecting each number word with a quantity (or collection) as the count progresses. Coherence KY.K.CC.4→KY.1.OA.5 	 Quantity - how much there is or how many there are of something less - having a value that is not as great as another value more - greater quantity or amount 	I am learning how numbers and quantities relate to each other. I know I am successful when I can • use one to one correspondence when counting objects to 20. • match a number to a group of items up to 20. • identify how many in a group up to 20. • identify the next number is 1 more (1 larger) within 20. • name one more or one fewer than a given number.
END OF UNIT GOAL: count 1 to 1 to 20, match a number to a group up to 20, identify a group to 20, identify one more within 20. **will continue through quarter 4		
KY.K.CC.5 Given a number from 1-20, count out that many objects.	strategy – the thinking needed to help solve a problem	I am learning to tell how many objects, up to 20, are in a group.

 a. Count to answer "how many?" questions with as many as 20 things arranged in a line, a rectangular array, or a circle. b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration. When presented with a numeral (in the range of 1-20), the student creates a collection of a like amount. When presented with a collection (in the range of 1-20) the student connects that collections in structured arrangements (line, circle, array and others) the student determines the quantity of that collection by counting. When DF UNIT GOAL: tell how many in a group within 20 in any order, count objects to 20. **will continue through quarter 4 		I know I am successful when I can • tell how many objects there are 0- 20 in a group (line, circle, scatter, 10 frame, domino pattern) • count out objects to show numbers 0-20.
 KY.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. Compare two collections (each containing up to 10 objects) to determine whether one collection is greater than, less than, or equal to the other. Students use matching strategies (pairing items from the collections) or 	 greater than- greater than is used to compare two numbers when the first number is larger than the second number (Symbols are not used in Kindergarten) less than - having a value that is not as great as another value 	I am learning to compare two groups of items. I know I am successful when I can • match to tell which group is greater than, less than, or equal to the

counting strategies (counting one collection and then the other). Note: Students do not need to use the relation symbols greater than (>), less than (<) and equal to (=) to compare groups of objects. Coherence KY.K.CC.6→KY.K.MD.3	 equal - identical in value, amount, quantity, or same number as another 	 number of objects in another group within 10. count to tell which group is greater than, less than, or equal to the number of objects in another group within 10.
 KY.K.CC.7 Compare two numbers between 1 and 10 presented as written numerals. When presented with two numerals (between 1 and 10), students determine which numeral is greater than, less than, or equal to the other. Students express some mathematical reasoning regarding their determination (5 is larger than 3 because it has two more). Note: Students do not need to use the relation symbols greater than (>), less than (<) and equal to (=) to compare numbers between 1 and 10. Coherence KY.K.CC.7→KY.1.NBT.3 END OF UNIT GOAL: greater than, less than, equal to within 10 NUMBERS (matching and counting). 	Compare - to examine quantities	I am learning to compare two numbers within 10. I know I am successful when I can • identify which numeral is greater than, less than or equal to another number within 10.
KY.K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	 more less equation addition subtraction 	I am learning to model addition and subtraction. I know I am successful when I can

Students flexibly model or represent addition and subtraction tasks across a range of contexts rather than just becoming proficient with a single model or representation. See Table 1 in Appendix A. Note: Drawings need not show detail but should accurately represent the quantities involved in the task. Coherence KY.K.OA.1 \rightarrow KY.K.OA.2 <u>END OF UNIT GOAL</u> : know symbols used for addition and subtraction equations, know and use flexible strategies for making models and find one more and one less for any		 find one more or one less than a number within 10. represent one more and one less using an equation.
number within 10. **will continue through quarter KY.K.OA.2 Solve addition and subtraction word problems and add and subtract within 10 by using objects or drawings to represent the problem. Students flexibly model or represent addition and subtraction situations or context problems (involving sums and differences up to 10). See Table 1 in Appendix A. Note: Drawings need not show detail but accurately represent the quantities involved in the task. Coherence KY.K.OA.2→KY.1.OA.1 END OF UNIT GOAL: solve word problems to 10 using objects or drawings (add to or one more/one less). **will continue through quarter 4	 word problem – a way to model mathematics using real world situations. subtract – to "take away" or to remove part of a collection, or to find the difference between two collections, resulting in a smaller collection. add – combining a collection of objects with another collection of objects resulting in a larger collection. 	I am learning to solve word problems using objects or drawings. I will know I am successful when I can • solve "add-to" word problems, up to 10, with objects or drawings. • solve one more than or one less than word problems within 10.
KY.K.OA.3 Decompose numbers less than or equal to 10.	Decompose - break numbers into two groups	I am learning to

 a. Decompose numbers into two groups in more than one way by using objects or drawings and record each decomposition by a drawing or equation. b. Use objects or drawings to demonstrate equality as the balancing of quantities. When presented with a numeral or collection (10 or less), the student separates that amount into two groups or collections via drawings or objects. Note: Drawings need not show detail, but accurately represent the quantities involved in the task. Students represent an equation as the balance of quantities. Note: Drawings need not show detail, but accurately represent the quantities involved in the task. <u>END OF UNIT GOAL</u>: flexibly break numbers into two groups, show groups with objects or drawings, draw pictures of broken down groups. 	 represent - show equation balance 	 decompose numbers using drawings or equations. I know I am successful when I can Break numbers into two groups in different ways. Show groups with objects or drawings. Draw pictures of broken down groups. Show equal groups using objects or drawings.
KY.K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number by using objects or drawings and record the answer with a drawing or equation.		I am learning to find the number that will make 10 using objects, tools or drawings. I know I am successful when I
When presented with a numeral or collection of objects between 1-9, represent the corresponding number that makes 10 with objects or drawings. Students record these combinations using either drawings or numbers. Drawings need not show detail, but accurately represent the quantities involved in the task.		 add to a given number to make 10 with objects. add to a given number to make 10 with drawings. add to a given number to make 10 and record my

7••••ten••••Coherence KY.K.OA.4 \rightarrow KY.1.OA.6END OF UNIT GOAL: Understand parts of ten (small doubles and small complements of ten). Students are given the large part of ten (5-9) and can tell the small part. (I have 7, I need 3) **will continue through quarter 4		answer with objects and drawings.
KY.K.OA.5 Fluently add and subtract within 5. Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Coherence KY.K.OA.5→KY.1.OA.6 END OF UNIT GOAL: Reaching fluency is an ongoing	 subtract – to "take away" or to remove part of a collection, or to find the difference between two collections, resulting in a smaller collection. add – combining a collection of objects with another collection of objects resulting in a larger collection. 	I am learning to combine and partition numbers within 5. I know I am successful when I can • name the parts of 5 using visual representations (finger patterns, five frames, and manipulatives, etc).

makes 5, I have 4 I need 5, how many do I need? 1" **will continue through quarter 4		
KY.K.NBT.1 Compose and decompose numbers from 11 to 19 using quantities (numbers with units) of ten ones and some further ones. Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. Using numbers or representations, students use 10 units as an anchor to compose and decompose quantities (up to 19). **These Anchors can be built by the students (ten tower, fill a frame, etc) or already established (1 row on a rekenrek, one full ten frame, etc) Note: Drawings need not show detail, but accurately represent the quantities involved in the task. 16 triangles = 10 triangles + $\Delta\Delta\Delta\Delta\Delta\Delta$; 18 beans = 10 beans + 8 beans Coherence KY.K.NBT.1 \rightarrow KY.1.NBT.2 <u>END OF UNIT GOAL</u> : build and break apart teen numbers from 11-14 using <u>10 ones</u> plus some more ones.	 build break apart teen numbers compose decompose ten ones (this is NOT "a ten" yet. That language emerges in 1st grade.) 	I am learning to compose and decompose teen numbers. I know I am successful when I can • compose the numbers 11-14 as <u>ten ones</u> and some more ones. • decompose the numbers 11-14 as ten ones and some more ones.
KY.K.G.3 Identify shapes as two-dimensional or three-dimensional. When presented with a shape or object, students determine whether it is two-dimensional (square, circle, triangle, rectangle, or hexagon) or three dimensional (cube, cone, cylinder, sphere). Students express mathematical reasoning regarding their responses. (The	 shapes 2D 3D difference attributes 	I am learning to identify 2D and 3D shapes. I know I am successful when I can Identify two-dimensional shapes. Identify three-dimensional shapes.

block is three-dimensional because it's thick and not flat like paper.) Coherence KY.K.G.3→KY.1.G.1 <u>END OF UNIT GOAL</u> : distinguish between 2D and 3D shapes. **will continue through quarter 4		 I can explain why a shape is two-dimensional or three-dimensional.
 KY.K.G.4 Describe the similarities, differences and attributes of two and three dimensional shapes using different sizes and orientations. When considering two-dimensional shapes (square, circle, triangle, rectangle, hexagon) or objects and three dimensional shapes (cube, cone, cylinder, sphere) or objects, students describe similarities, differences and attributes. ("The window and paper are both rectangles, but the window sits sideways and my paper is long ways." "My book and my paper both look like rectangles, but my book is three-dimensional because it is thicker.") Coherence KY.K.G.4→KY.1.G.1 END OF UNIT GOAL: describe attributes of 2D and 3D shapes. **will continue through quarter 4 	 cube cone cylinder sphere attributes 	 I am learning to describe 2D and 3D shapes using attributes. I know I am successful when I can identify an attribute to describe a 2D shape. identify an attribute to describe a 3D shape. describe what is the same between 2D and 3D shapes. describe what is different between 2D and 3D shapes.
 KY.K.G.5 Model shapes in the world by building figures from components and drawing shapes. Students construct and draw models of shapes (square, circle, triangle, rectangle, hexagon, cube, cone, cylinder, sphere) in the world around them. Students create shapes with materials that include but are not limited to straws, pipe cleaners, popsicle sticks or clay and describe the shape they create. (Students use sticks and a ball to 	 model 2D 3D attributes 	I am learning to model shapes in the world. I know I am successful when I can • draw 2D and 3D shapes. • build and create 2D and 3D shapes using materials.

replicate an ice cream cone.) Coherence		
KY.K.G.5→KY.1.G.1		
END OF UNIT GOAL: model 2D and 3D shapes.		
Supporting Standards:		
 KY.K.MD.3 Classify and sort objects or people by attributes. Limit objects or people in each category to be less than or equal to 10. For a group of 10 (or less) objects/people, students compare and order objects according to a common measurable attribute (height, weight, length, width, depth) shared by the objects (arranging 4 blocks from heaviest to lightest; arranging classmates from tallest to shortest). Coherence KY.K.MD.3→KY.1.MD.4 	 large small thick thin light heavy tall short 	I am learning to use measurable attributes to classify, sort, compare and order objects. I know I am successful when I can • sort objects by shape, size, and color. • compare objects using the same attribute. • can order objects by measurable attributes.
 KY.K.G.1 Name and describe shapes in the environment. a. Describe objects in the environment using names of shapes. b. Describe the relative positions of these objects using terms above, below, in front of, behind and next to. MP.6 For objects in student's environment, the student accurately provides a shape name (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). ("The clock on the wall is a circle." "The desktop is a rectangle.") 	 beside below behind next to in front of above shapes: square circle triangle rectangles hexagon cube 	I am learning to describe shapes in the environment. I am successful when I can • describe objects in the environment using names of 2D shapes. • describe the position of a shape.

Students use positional language to describe the relationships between objects ("The clock is above the bulletin board." "My desk is next to the computer table.") Coherence KY.K.G.1 \rightarrow KY.K.G.4	 cone cylinder sphere 	
 KY.K.G.2 Correctly name shapes regardless of orientations or overall size. MP.7 Students identify and name shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres) regardless of size, orientation, or positioning. (The classroom window is a rectangle and this paper is a rectangle, too.) Coherence KY.K.G.2→KY.K.G.4 KY.K.G.6 Compose simple shapes to form larger shapes. MP.3, MP.5 Students explore by using simple shapes to construct a larger shape. (Students arrange paper triangles to form a rectangle. Students arrange triangle pattern blocks to form a hexagon.) 	 square circle triangle rectangle hexagon cube cone cylinder sphere • combine construct form 	I am learning to name familiar 2-D and 3-D shapes. I am successful when I can • identify 2D shapes in different sizes, positions, and orientations. • identify 3D shapes in different sizes, positions, and orientations. I am learning to use simple shapes to form larger shapes. I am successful when I can • identify a simple shape. • form a larger shape using simple shapes.
Coherence KY.K.G.6→KY.1.G.2		
*Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. These examples are not comprehensive.		
Needed Manipulatives and Tools		
Attribute Blocks Pattern blocks Geoblocks & Geosolids 2D shapes (models and environmental examples)		

3D shapes (models and environmental examples) Math Journal Counters (any type) 10 Frames Non-Standard measurement items: Snap Cubes, Paper Clips... etc

Anchor Resources/Materials

Investigations Unit 5 Investigations Unit 6

Classroom routines – Daily Planner Unit 5 Classroom Routines- Daily Planner -Unit 6

Diagnostic testing (such as SNAP/AVMR) (if school/teacher choice)

<u>https://knp.kentuckymathematics.org/#!/page_knphome</u> username: bluegrass password: math **great source for additional workshop tasks

Math Learning Center Math Apps

Number Talk Images

Summative Assessment

Link to Common Unit Assessment

These are the following assessments you can do individually or whole group with students to determine their skill level beginning, during, and after the unit: Name 2D shape models Name 2D shape in the environment With smaller shapes construct a larger one. (2 triangles to make a square/rectangle; 2 squares to make a rectangle, etc) Compare the lengths of 2 objects and tell the difference (longer/shorter/taller) Sort shapes into 3 categories: size, shape, color Order the objects based on length. (shortest to longest, etc)