

[KY Math Standard \(link\)](#)

[FCPS Kindergarten Trajectory](#)

[K Unit 4 Google Link](#)

[Priority Content \(link\)](#)

<b>Unit Title: Asking Questions, Solving Problems</b>		<b>Estimated Time Frame: 40 - 55 days</b>	
Essential Standards: K.CC.1, K.CC.2, K.CC.6, K.OA.1, K.OA.2, K.OA.4, K.OA.5, K.NBT.1, K.MD.1, K.MD.2, K.MD.3, K.MD.4, K.G.2 Supporting Standards: K.CC.3, K.CC.4, K.CC.5, K.G.4			
<b>Big Idea(s)</b> <a href="#">CRA explanations for Kindergarten Unit 4</a>			
<p>NUMBER: STORY PROBLEMS: Solving real life story problems within 10 using adding and subtracting.                  Add and subtract fluently within 5 (<b>with visuals but without counting</b>).                  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) <b>Students can use visuals for these and may still be counting.</b></p>			
<b>Essential Questions:</b>		<b>Common Misconceptions:</b>	
How can I make bigger numbers using smaller numbers? How many ways can I count and tell the parts of 5? How can I use objects, visuals and writing to solve real life story problems?		height/length width/depth <b>NOTE TO TEACHER:</b> students are not developmentally ready to learn the value of the coins, <b>ONLY</b> introduce for recognition and identification	

Standards for Mathematical Practice ( <b>bolded</b> practices are emphasized in this unit)	Kentucky Interdisciplinary Literacy Practices	
<p><b>MP.1. Make sense of problems and persevere in solving them.</b></p> <p><b>MP.2. Reason abstractly and quantitatively.</b></p> <p>MP.3. Construct viable arguments and critique the reasoning of others.</p> <p>MP.4. Model with mathematics.</p> <p>MP.5. Use appropriate tools strategically.</p> <p>MP.6. Attend to precision.</p> <p><b>MP.7. Look for and make use of structure.</b></p> <p><b>MP.8. Look for and express regularity in repeated reasoning.</b></p>	<ol style="list-style-type: none"> <li>1. Recognize that text is anything that communicates a message.</li> <li>2. Employ, develop, and refine schema to understand and create text.</li> <li>3. View literacy experiences as transactional, interdisciplinary and transformational.</li> <li>4. Utilize receptive and expressive language arts to better understand self, others, and the world.</li> <li>5. Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</li> <li><b>6. Collaborate with others to create new meaning.</b></li> <li><b>7. Utilize digital resources to learn and share with others.</b></li> <li><b>8. Engage in specialized, discipline specific literacy practices.</b></li> <li><b>9. Apply high level cognitive processes to think deeply and critically about text.</b></li> <li>10. Develop a literacy identity that promotes lifelong learning.</li> </ol>	
Essential Standards: KAS Content Standards <a href="#">CRA explanations for Kindergarten Unit 4</a>	Prerequisite Skills & Essential Vocabulary	Sample Learning Intentions* & Sample Success Criteria*
<p><b>KY.K.CC.1</b> Count</p> <p>a. Count to 100 by ones and by tens.</p> <p>b. Count backwards from 30 by ones.</p> <p>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.</p> <p>Coherence KY.K.CC.1→KY.1.NBT.1</p>	<ul style="list-style-type: none"> <li>● number</li> <li>● numeral</li> <li>● forward</li> <li>● backward</li> <li>● tens</li> </ul>	<p>I am learning to count forward and backward within 100.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● count forward to 100.</li> <li>● Count forward to 100 by tens.</li> <li>● count backward from 30.</li> </ul>

<p><b>END OF UNIT GOAL:</b> count to 100 by ones, count to 100 by tens, count from 30 by ones.</p>		
<p><b>KY.K.CC.2</b> Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1).</p> <p>Students verbally count forward starting at a number other than one (58, 59, 60, 61, 62. . .) within 100. Coherence KY.K.CC.2→KY.1.NBT.1</p> <p><b>END OF UNIT GOAL:</b> count within 100 by ones from any number forward, count within 20 from any number backward, name number before &amp; number after within 20.</p>	<ul style="list-style-type: none"> <li>● forward</li> <li>● backward</li> <li>● count</li> <li>● quantity</li> </ul>	<p>I am learning the verbal number sequences within 100.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● count forward from a given number within 100.</li> <li>● count backward from a given number within 20.</li> <li>● name a number before and after a given number within 20.</li> </ul>
<p><b>KY.K.CC.6</b> Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.</p> <p><b>Compare two collections</b> (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 counting strategies (counting one collection and then the other). Note: Students do not need to use the relation symbols greater than (&gt;), less than (&lt;) and equal to (=) to compare groups of objects. Coherence KY.K.CC.6→KY.K.MD.3</p>	<ul style="list-style-type: none"> <li>● 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)</li> <li>● less than - having a value that is not as great as another value</li> <li>● equal - identical in value, amount, quantity, or same number as another</li> </ul>	<p>I am learning to compare two groups of items.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● match to tell which group is greater than, less than, or equal to the number of objects in another group within 10.</li> <li>● count to tell which group is greater than, less than, or equal to the number of objects in another group within 10.</li> </ul>

<p><b>END OF UNIT GOAL:</b> greater than, less than, equal to within 10 IN A GROUP OF OBJECTS (matching and counting).</p>		
<p><b>KY.K.OA.1</b> Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.</p> <p>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→KY.K.OA.2</p> <p><b>END OF UNTIL GOAL:</b> know symbols used for addition and subtraction equations, know and use flexible strategies for making models and solving for any number within 10.</p>	<ul style="list-style-type: none"> <li>● subtract – to “take away” or to remove part of a collection, or to find the difference between two collections, resulting in a smaller collection.</li> <li>● add – combining a collection of objects with another collection of objects resulting in a larger collection.</li> <li>● Plus symbol</li> <li>● Minus symbol</li> <li>● Equal symbol</li> <li>● model</li> </ul>	<p>I am learning to model addition and subtraction.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● solve put-together problems with the result unknown (within 10) using any strategy.</li> <li>● solve removed item (or take away) problems with results unknown (within 10) using any strategy.</li> </ul>
<p><b>KY.K.OA.2</b> Solve addition and subtraction word problems and add and subtract within 10 by using objects or drawings to represent the problem.</p> <p>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</p>	<ul style="list-style-type: none"> <li>● story problem – a way to model mathematics using real world situations.</li> <li>● subtract – to “take away” or to remove part of a collection, or to find the difference between two collections, resulting in a smaller collection.</li> <li>● add – combining a collection of objects with another collection of</li> </ul>	<p>I am learning to solve word problems using objects or drawings.</p> <p>I will know I am successful when I can</p> <ul style="list-style-type: none"> <li>● solve “add-to” story problems up to 10.</li> <li>● solve “take from” story problems up to 10.</li> </ul>


<p><b>END OF UNTIL GOAL:</b> To solve word problems within 10 using objects or drawings, and record using a drawing or equation.</p>	<p>objects resulting in a larger collection.</p>	<ul style="list-style-type: none"> <li>• create a story that matches a number sentence I am given. (within 10)</li> </ul>
<p><b>KY.K.OA.4</b> 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.</p> <p>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.</p> <div data-bbox="365 799 804 961" style="text-align: center;"> </div> <p>Coherence KY.K.OA.4→KY.1.OA.6</p> <p><b>END OF UNIT GOAL:</b> 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)</p>		<p>I am learning to find the number that will make 10 using objects, tools or drawings.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• add to a given number to make 10 and record my answer with objects and drawings.</li> <li>• Solve “How many more to 10” questions using objects or drawings.</li> </ul>
<p><b>KY.K.OA.5</b> Fluently add and subtract within 5.</p>	<ul style="list-style-type: none"> <li>• subtract – to “take away” or to remove part of a collection, or to find the</li> </ul>	<p>I am learning to combine and partition numbers within 5.</p>

<p>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”).</p> <p>Coherence KY.K.OA.5→KY.1.OA.6</p> <p><b>END OF UNIT GOAL:</b> <i>Reaching fluency is an ongoing process that will continue into the next school year.</i></p> <p>Students can use visuals in Kindergarten, but should start to recognize the parts quickly without counting. “1 and 4 make 5, 1 plus 4 makes 5, I have 4, I need 5, how many do I need? 1”</p>	<p>difference between two collections, resulting in a smaller collection.</p> <ul style="list-style-type: none"> <li>• add – combining a collection of objects with another collection of objects resulting in a larger collection.</li> </ul>	<p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• name all the parts of numbers within 5 using mental models.</li> </ul>
<p><b>KY.K.NBT.1</b> 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.</p> <p>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...)</p> <p><b>Note:</b> Drawings need not show detail, but accurately represent the quantities involved in the task. 16 triangles = 10 triangles + <math>\triangle\triangle\triangle\triangle\triangle</math>; 18 beans = 10 beans + 8 beans</p>	<ul style="list-style-type: none"> <li>• Build</li> <li>• Break apart</li> <li>• Teen numbers</li> <li>• Compose</li> <li>• Decompose</li> </ul>	<p>I am learning to compose and decompose teen numbers.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• build and break apart 10 ones and 5 one to make 15 using numbers or objects</li> <li>• build and break apart 10 ones and 6 ones to make 16 using numbers or objects</li> <li>• build and break apart 10 ones and 7 ones to make 17 using numbers or objects</li> </ul>


<p>Coherence KY.K.NBT.1→KY.1.NBT.2</p> <p><u>END OF UNIT GOAL</u>: build and break apart teen numbers from 11-19 using <u>10 ones</u> plus some more ones.</p>		<ul style="list-style-type: none"> <li>● build break apart 10 ones and 8 ones to make 18 using numbers or objects</li> <li>● build break apart 10 ones and 9 ones to make 19 using numbers or objects</li> <li>● I can explain how to compose or decompose a number between 11 and 19.</li> </ul>
<p><b>KY.K.MD.1</b> Describe measurable attributes (length, height, weight, width, depth) of an object or a set of objects using appropriate vocabulary</p> <p>For a single object, students verbally identify more than one attribute measured (wooden block - height, weight). Coherence KY.K.MD.1→KY.1.MD.2</p> <p><u>END OF UNIT GOAL</u>: identify measurable attributes.</p>	<ul style="list-style-type: none"> <li>● length</li> <li>● width</li> <li>● weight</li> <li>● height</li> <li>● depth</li> </ul>	<p>I am learning to describe ways to measure an object.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● Identify ways to measure an object.</li> <li>● describe measurable attributes of an object.</li> </ul>
<p><b>KY.K.MD.2</b> Directly compare two objects with a measurable attribute in common, to see which object has “more of”/ “less of” the attribute and describe the difference.</p> <p>Students consider and compare a common measurable attribute shared by two objects (Which cup is taller and which is shorter? Which bucket of sand is heavier and which is lighter?). Coherence KY.K.MD.1→KY.1.MD.1</p> <p><u>END OF UNIT GOAL</u>: compare objects using measurable attributes.</p>	<ul style="list-style-type: none"> <li>● attributes</li> <li>● more of</li> <li>● less of</li> <li>● measure</li> <li>● compare</li> <li>● differences</li> <li>● similarities</li> </ul>	<p>I am learning to compare two objects and decide which has more and which has less using attributes.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>● identify attributes of two objects that are the same</li> <li>● identify which object has more of the attribute</li> <li>● identify which object has less of the attribute</li> </ul>

		<ul style="list-style-type: none"> <li>describe the difference of two objects using measurable attributes</li> </ul>
<p><b>KY.K.MD.3</b> Classify and sort objects or people by attributes. Limit objects or people in each category to be less than or equal to 10.</p> <p>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</p>	<ul style="list-style-type: none"> <li>large</li> <li>small</li> <li>thick</li> <li>thin</li> <li>light</li> <li>heavy</li> <li>tall</li> <li>short</li> </ul>	<p>I am learning to use measurable attributes to classify, sort, compare and order objects.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>sort objects by shape, size, and color.</li> <li>compare objects using the same attribute.</li> <li>can order objects by measurable attributes.</li> </ul>
<p><b>KY.K.MD.4</b> Recognize and identify coins by name (penny, nickel, dime, quarter).</p> <p>Students identify coins (penny, nickel, dime, quarter) when presented. When shown a nickel, name the coin as a nickel; select a nickel when presented with a group of different coins. Note: Students need not identify the value of these coins. Coherence KY.K.MD.4→KY.1.MD.3b</p>	<ul style="list-style-type: none"> <li>penny</li> <li>nickel</li> <li>dime</li> <li>quarter</li> </ul>	<p>I am learning to recognize and identify coins.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>recognize and identify a penny</li> <li>recognize and identify a nickel</li> <li>recognize and identify a dime</li> <li>recognize and identify a quarter</li> </ul>
<p><b>KY.K.G.2</b> Correctly name shapes regardless of orientations or overall size. <b>MP.7</b></p>	<ul style="list-style-type: none"> <li>square</li> <li>circle</li> <li>triangle</li> <li>rectangle</li> <li>hexagon</li> </ul>	<p>I am learning to name familiar 2-D and 3-D shapes.</p> <p>I know I am successful when I can</p>



<p>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</p>	<ul style="list-style-type: none"> <li>• cube</li> <li>• cone</li> <li>• cylinder</li> <li>• sphere</li> </ul>	<ul style="list-style-type: none"> <li>• identify 2D and 3D shapes in different sizes, positions, and orientations.</li> </ul>
<p><b>Supporting Standards:</b></p>		
<p><b>KY.K.CC.3</b> 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  <b>END OF UNIT GOAL:</b> identify numbers to 20, writer numbers to 20, match numeral to objects to 20.</p>	<p>numeral number</p>	<p>I am learning to write numbers to tell “how many.”  I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• identify numerals 0-20.</li> <li>• write numerals 0-20.</li> <li>• write a numeral to match a group of objects up to 20.</li> </ul>
<p><b>KY.K.CC.4</b> Understand the relationship between numbers and quantities; connect counting to cardinality. <i>(see corresponding notes below)</i>  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.</p>	<ul style="list-style-type: none"> <li>• quantity - how much there is or how many there are of something</li> <li>• less - having a value that is not as great as another value</li> <li>• more - greater quantity or amount</li> </ul>	<p>I am learning how numbers and quantities relate to each other.  I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• use one to one correspondence when counting objects to 20.</li> <li>• match a number to a group of items up to 20.</li> </ul>

<p>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.</p> <p>c. Understand that each successive number name refers to a quantity that is one larger.</p> <p>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.</p> <p>Coherence KY.K.CC.4→KY.1.OA.5</p> <p><u>END OF UNIT GOAL</u>: 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.</p>		<ul style="list-style-type: none"> <li>• identify how many in a group up to 20.</li> <li>• identify the next number is 1 more (1 larger) within 20.</li> <li>• name one more or one fewer than a given number.</li> </ul>
<p><b>KY.K.CC.5</b> Given a number from 1-20, count out that many objects.</p> <p>a. Count to answer “how many?” questions with as many as 20 things arranged in a line, a rectangular array, or a circle.</p> <p>b. Count to answer “how many?” questions with as many as 10 things in a scattered configuration.</p> <p>When presented with a numeral (in the range of 1-20), the student creates a collection of a like amount. When</p>	<p>strategy – the thinking needed to help solve a problem</p>	<p>I am learning to tell how many objects, up to 20, are in a group.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>• tell how many objects there are 0- 20 in a group (line, circle, scatter, 10 frame, domino pattern)</li> </ul>

<p>presented with a collection (in the range of 1-20) the student connects that collection to the correct numeral.</p> <p>When presented with collections in structured arrangements (line, circle, array and others) the student determines the quantity of that collection by counting.</p>  <p><b>END OF UNIT GOAL:</b> tell how many in a group within 20 in any order, count objects to 20.</p>		<ul style="list-style-type: none"> <li>count out objects to show numbers 0-20.</li> </ul>
<p><b>KY.K.G.4</b> Describe the similarities, differences and attributes of two and three dimensional shapes using different sizes and orientations.</p> <p>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</p> <p><b>END OF UNIT GOAL:</b> describe attributes of 2D and 3D shapes.</p>	<ul style="list-style-type: none"> <li>cube</li> <li>cone</li> <li>cylinder</li> <li>sphere</li> <li>attributes</li> </ul>	<p>I am learning to name and describe 2D and 3D shapes using attributes.</p> <p>I know I am successful when I can</p> <ul style="list-style-type: none"> <li>give an attribute to describe a 2D shape</li> <li>give an attribute to describe a 3D shape</li> <li>tell what is the same between 2D and 3D shapes</li> <li>tell what is different between 2D and 3D shapes</li> </ul>
<p>*Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. These examples are not comprehensive.</p>		

Needed Manipulatives and Tools
<p>Attribute Blocks            Pattern blocks            2D shapes (models and environmental examples)            3D shapes (models and environmental examples)            Math Journal            Counters (any type)            Sequencing number cards            10 Frames            Non-Standard measurement items: Snap Cubes, Paper Clips... etc            Balance/Scale</p>
Anchor Resources/Materials
<p>Investigations Unit 7            Investigations Unit 8</p> <p>Classroom routines – Daily Planner - Unit 7            Classroom Routines- Daily Planner - Unit 8            Diagnostic testing (such as SNAP/AVMR) (if school/teacher choice)</p> <p><a href="https://knp.kentuckymathematics.org/#!/page_knphome">https://knp.kentuckymathematics.org/#!/page_knphome</a> username: bluegrass password: math **great source for additional workshop tasks</p> <p><a href="#">Math Learning Center Math Apps</a></p> <p><a href="#">Number Talk Images</a></p>
Summative Assessment
<p><a href="#">Link to Common Unit Assessment</a>            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</p>

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)