

[KY Math Standards 1st grade](#)[FCPS 1st Grade Trajectory](#)[1st Unit 1 Google Link](#)[First grade Priority Content](#)

Unit Title: Building Numbers, Solving Problems, and Comparing Shapes		Estimated Time Frame: 35-41 days
Essential Standards: 1.OA.1, 1.OA.5, 1.OA.6, 1.NBT.1, 1.G.1, 1.G.2 <i>Supporting Standards: 1.NBT.2, 1.NBT.3, 1.MD.3</i>		
Big Idea(s) CRA explanations for 1st grade Unit 1		
<p>NUMBERS: The set of real numbers is infinite and each real number can be associated with a unique point on the number line.</p> <p>COMPARISON: Numbers and Shapes can be sorted, compared and classified by their relative values/attributes.</p> <p>OPERATION, MEANINGS AND RELATIONSHIPS: The same number sentence (e.g. $12-4=8$) can be associated with different concrete or real-world situations, AND different number sentences (e.g. $2+4=6$, $6-4=2$, etc.) can be associated with the same concrete or real-world situation.</p> <p>ORIENTATION AND LOCATION: Understand objects in space can be oriented in an infinite number of ways, and an object's location in space can be described quantitatively.</p>		
Essential Questions:	Common Misconceptions:	
<p>How can numbers be put together and taken apart to solve problems most efficiently?</p> <p>How do models or visuals of quantity help to solve math problems?</p> <p>How do I choose the best strategy for solving a real-life math problem?</p> <p>Where can we find geometric figures in the world around us?</p> <p>How can we describe geometric figures?</p>	<ul style="list-style-type: none"> ● Number reversals and/or confusions (12/20/21, 6/b) ● Skipping 13/15 when counting ● Meaning of the equal sign ● Confusions with 10 and some more <ul style="list-style-type: none"> ○ ***NO BASE TEN BLOCKS! Students are typically not mathematically aware enough in 1st grade to understand the “why” behind “trading”. Give students materials that they can physically take apart or put together at the beginning of this instruction (craft sticks and bands, link cubes towers, etc...), moving into manipulatives where they can SEE all the parts.(dot strips or mini ten-frames) Students should not have to “trade or borrow” in the 1st grade math standards. ● Number quantity ● Using keywords to solve story problems <ul style="list-style-type: none"> ○ (KEY WORDS! Be aware key words have MULTIPLE 	

	<p>meanings and can <u>create</u> misconceptions. It is best to use reasoning and identify the action and unknown. For example: If there are 10 girls and 8 boys in our class. How many more girls are there than boys?</p> <ul style="list-style-type: none"> • Shape identification • Squares cannot be rectangles 	
Standards for Mathematical Practice (bolded practices are emphasized in this unit)	Kentucky Interdisciplinary Literacy Practices	
<p>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.</p>	<ol style="list-style-type: none"> 1. Recognize that text is anything that communicates a message. 2. Employ, develop, and refine schema to understand and create text. 3. View literacy experiences as transactional, interdisciplinary and transformational. 4. Utilize receptive and expressive language arts to better understand self, others, and the world. 5. Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks. 6. Collaborate with others to create new meaning. 7. Utilize digital resources to learn and share with others. 8. Engage in specialized, discipline specific literacy practices. 9. Apply high level cognitive processes to think deeply and critically about text. 10. Develop a literacy identity that promotes lifelong learning. 	
Essential Standards: KAS Content Standards CRA explanations for 1st grade Unit 1	Prerequisite Skills & Essential Vocabulary	Sample Learning Intentions* & Sample Success Criteria*
KY.1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of <u>adding to, taking from</u>, putting together, taking apart, and comparing, with (<u>total</u>) unknowns in all positions.	Story problems (add to, take from) within 10 using objects or drawings.	I am learning to solve story/word problems. I know I am successful when:

<p>Students flexibly model or represent addition and subtraction situations or context problems (involving sums and differences up to 20). See Table 1 in Appendix A. Note: Drawings need not show detail, but accurately represent the quantities involved in the task. 1.MD.4 Coherence K.OA.2→ 1.OA.1→ 2.OA.1</p>	<ul style="list-style-type: none"> • Add to • Take from • Equal • Addition • Subtraction 	<ul style="list-style-type: none"> • I can tell when I need to add or subtract to solve a word problem. • I can model the story and solve a problem situation up to 20 by drawing or writing an equation to represent the situation. • I can model the story and solve a problem situation up to 20 verbally or with materials. 						
<p>KY.1.OA.5 Relate counting to addition and subtraction. Strategies used when relating addition to subtraction: counting all (addition); counting all (subtraction);</p> <p style="text-align: right;">KY.K.CC.4→KY.1.OA.5→KY.1.OA.6</p> <p>**Specifically this unit - +/- 1 and +/- 2 only, or counting all to solve.</p> <table border="1" data-bbox="184 987 894 1130"> <tr> <td style="background-color: #4F81BD; color: white; text-align: center;">Counting all (addition)</td> <td>Start with 1 and count to find the total number of objects</td> <td style="text-align: center;">5 + 3 Start from 1, count up to 5, and count up 3 more: 1, 2, 3, 4, 5 . . . 6, 7, 8</td> </tr> <tr> <td style="background-color: #4F81BD; color: white; text-align: center;">Counting all (subtraction)</td> <td>Remove the appropriate number of items and count the remaining items starting with 1</td> <td style="text-align: center;">8 - 5 Start with 8 objects. Remove 5 and count the remaining items: 1, 2, 3</td> </tr> </table>	Counting all (addition)	Start with 1 and count to find the total number of objects	5 + 3 Start from 1, count up to 5, and count up 3 more: 1, 2, 3, 4, 5 . . . 6, 7, 8	Counting all (subtraction)	Remove the appropriate number of items and count the remaining items starting with 1	8 - 5 Start with 8 objects. Remove 5 and count the remaining items: 1, 2, 3	<p>Count, write, and represent numbers within 10</p> <p>1:1 correspondence, directionality</p> <p>Counting a quantity in more than one way</p> <p>Cardinality</p> <ul style="list-style-type: none"> • Counting all • Relate • Strategies • Relationships 	<p>I am learning to relate counting to addition and subtraction.</p> <p>I know I am successful when:</p> <ul style="list-style-type: none"> • I can count forward and backward (add/subtract). • I can use addition and subtraction strategies to solve problems. • I can use a numeral track or number line to show my strategy.
Counting all (addition)	Start with 1 and count to find the total number of objects	5 + 3 Start from 1, count up to 5, and count up 3 more: 1, 2, 3, 4, 5 . . . 6, 7, 8						
Counting all (subtraction)	Remove the appropriate number of items and count the remaining items starting with 1	8 - 5 Start with 8 objects. Remove 5 and count the remaining items: 1, 2, 3						
<p>KY.1.OA.6 Add and subtract within 20. a. Fluently add and subtract within 10. b. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making 10;</p>	<p>Fluently add and subtract within 5.</p> <p>Decompose numbers less than or equal to 5.</p> <p>Create a number line to at least 10.</p>	<p>I am learning to mentally add and subtract.</p> <p>I am learning to explain my thinking and sometimes record my thinking.</p>						

<p>decomposing a number leading to a 10; using the relationship between addition and subtraction; creating equivalent but easier or known sums.</p> <p>At this point in the year, students solve fluency tasks (within 10) based on small doubles, five plus ____, and small parts of tens.</p> <p>1+1, 2+2, 3+3, 4+4, 5+5 5+0, 5+1, 5+2, 5+3, 5+4 6+4, 7+3, 8+2, 9+1, 10+0</p> <p>Students begin to connect counting forward and backward with a number line and adding and subtracting.</p> <p>Note: Reaching fluency is an ongoing process that will take much of the year.</p> <p style="text-align: center;">KY.1.NBT.4 Coherence KY.K.OA.2→KY.1.OA.6→KY.2.OA.2</p>	<ul style="list-style-type: none"> ● Small doubles ● Number line ● Equivalent ● Sums ● Strategies ● Fluency ● Compose ● Decompose ● Add ● Subtract ● Continue counting 	<p>I know I am successful when:</p> <ul style="list-style-type: none"> ● I can mentally solve small doubles within 10. ● I can mentally solve 5 + some more within 10. ● I can mentally solve small parts of ten within 10. ● I can add within 20 using a variety of strategies with materials. ● I can subtract within 20 using a variety of strategies with materials.
<p>KY.1.NBT.1 Count and represent numbers.</p> <p>a. Count forward to and backward from 120, starting at any number less than 120.</p> <p>b. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>Students use strategies based on place value, properties of operations and the relationship between addition and subtraction; however, when solving any problem, students choose any strategy. A written representation shows a strategy using words, pictures and/or numbers.</p> <p style="text-align: center;">Coherence KY.K.CC.2→KY.1.NBT.1→KY.2.NBT.2</p>	<p>Count forward from a given number within 100.</p> <ul style="list-style-type: none"> ● Forward ● Backward ● Numerals ● represent 	<p>I am learning to count forward and backward and represent numbers.</p> <p>I know I am successful when:</p> <ul style="list-style-type: none"> ● I can count forward to 50 starting from any number. ● I can count back from 50 starting from any number. ● I can tell the number before or after any number within 50. ● I can read numbers up to 50. ● I can write numbers to 50. ● I can write the number to show

		how many objects in a group to 50.
<p>KY.1.G.1 Distinguish between defining attributes versus non-defining attributes; build and draw shapes to possess defining attributes.</p> <p>Defining attributes include, but are not limited to, number of sides or open/closed shapes.</p> <p>Non-defining attributes include, but are not limited to, color, orientation or overall size.</p> <p style="text-align: right;">Coherence KY.K.G.4→KY.1.G.1→KY.2.G.1</p>	<p>Describe similarities, differences, and attributes of 2-D and 3-D shapes with different sizes and orientations.</p> <ul style="list-style-type: none"> ● Attributes (vertices, sides, straight edges, open/closed) ● non-defining attributes (colors, size, patterns, orientation) ● Shapes ● Distinguish (describe) ● Build ● Draw 	<p>I am learning to build and draw shapes.</p> <p>I know I'm successful when:</p> <ul style="list-style-type: none"> ● I can build and draw shapes with appropriate attributes. ● I can distinguish (describe) shapes with appropriate attributes.
<p>KY.1.G.2 Compose shapes.</p> <p>a. Compose two-dimensional shapes to create rectangles, squares, trapezoids, triangles, half-circles, quarter-circles and composite shapes to compose new shapes from the composite shapes.</p> <p>Students do not need to learn formal names such as “right rectangular prisms.”</p> <p style="text-align: right;">Coherence KY.K.G.6→KY.1.G.2</p> <p>First graders learn to perceive a combination of shapes as a single new shape (e.g., recognizing that two isosceles triangles can be combined to make a rhombus, and simultaneously seeing the rhombus and the two triangles). Thus, they develop competencies that include:</p> <ul style="list-style-type: none"> ■ Solving shape puzzles ■ Constructing designs with shapes 	<p>Use simple shapes to construct larger shapes.</p> <ul style="list-style-type: none"> ● Compose/Create ● Use ● 2D Shapes (rectangles, squares, trapezoids, triangles, half-circles and quarter-circles composite shape) 	<p>I am learning to use shapes to compose other 2D shapes.</p> <p>I know I'm successful when:</p> <ul style="list-style-type: none"> ● compose 2D shapes to create rectangles, squares, trapezoids, triangles, half-circles and quarter-circles composite shapes and compose new shapes from the composite shapes.

<p>📦 Creating and maintaining a shape as a unit The ability to describe, use and visualize the effect of composing and decomposing shapes is an important mathematical skill. It is not only relevant to geometry, but is related to children’s ability to compose and decompose numbers, which then leads to their fraction understanding. Students may use pattern blocks, plastic shapes, tangrams, or computer environments to make new shapes. The teacher can provide students with cutouts of shapes and ask them to combine them to make a particular shape.</p>		
Supporting Standards:		
<p>KY.1.NBT.2 Understand the two-digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <p>a. 10 can be thought of as a <u>bundle of ten ones</u> — called a “ten.”</p> <p>b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones.</p> <p>c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight or nine tens (and 0 ones).</p> <p>(building 10’s with different manipulatives, popsicle sticks, blocks, unifix cubes, etc;) Coherence KY.K.NBT.1→ KY.1.NBT.2→ KY.2.NBT.1</p>	<p>Understand that teen numbers are composed of ten ones and some more.</p> <ul style="list-style-type: none"> • tens • ones • digit • bundle • teen number • a ten 	<p>I am learning to understand quantities to 100.</p> <p>I know I am successful when:</p> <ul style="list-style-type: none"> • I can bundle groups of ten to show a decuple (multiple of ten) number. • I can count bundles of ten both forward and backward.
<p>KY.1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.</p>	<p>Compare two bare numbers between 1 and 10.</p>	<p>I am learning to compare two-digit numbers based on the</p>

<p>(comparing numbers, review single digits, bare numbers) Not using symbols ($>$ = $<$) at this point in the year. Coherence KY.K.NBT.1→KY.1.NBT.3→KY.2.NBT.4</p> <p>Suggested Progression:</p> <ol style="list-style-type: none"> 1. Build numbers 0-10 not using symbols. 2. Use visuals of numbers 0-10 not using symbols. 3. Use bare numbers 0-10 not using symbols. 	<ul style="list-style-type: none"> • compare • digit • bigger, larger, more, greater than • smaller, fewer, less than • equal to 	<p>meanings of the tens and ones digits.</p> <p>I know I am successful when:</p> <ul style="list-style-type: none"> • I can compare single digit bare numbers • I can compare bare numbers
<p>KY.1.MD.3 Assign values to time and money.</p> <p>a. Tell and write time in hours (and half-hours) using analog and digital clocks. (Only identify full hours at this point in the year.)</p> <p>b. Identify the coins by values (penny, nickel, dime, quarter). (Only identify coin names at this point in the year.)</p> <p style="text-align: right;">KY.2.MD.7</p> <p style="text-align: center;">Coherence KY.K.MD.4→KY.1.MD.3→KY.2.MD.8</p>	<ul style="list-style-type: none"> • Hour hand • Minute hand • Digital • Analog • “On the hour” <ul style="list-style-type: none"> • Penny • Nickel • Dime • Quarter 	<p>I am learning to write and tell time to the hour.</p> <p>I am learning to identify coins by name.</p> <p>I know I’m successful when:</p> <ul style="list-style-type: none"> • I can tell and write time to the hour using an analog and digital clock. • I can identify and recognize the name of coins (penny, nickel, dime, quarter).
<p>*Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. These examples are not comprehensive. Please decide on appropriate Success criteria based on your students' needs.</p>		

Notes:

Needed Manipulatives and Tools

number lines (student made or open/empty)
Five-frame
Ten-frame
Bundles and sticks (craft sticks and rubber bands or hair bands)
counting collections ([video example](#))
Towers of Unifix cubes
[Bead racks](#)/ bead strings
Coins
Student clocks
Paper shapes
Pattern blocks
Math Journal

Anchor Materials/Resources

Investigations Unit 1 – Building Numbers and Solving Story Problems
Investigations Unit 2 – Comparing and Combining Shapes

[Illustrative Mathematics - Unit 1 - Section A](#)
[Illustrative Mathematics - Unit 2 - Sections A-D](#) could be applicable
[Illustrative Mathematics - Unit 7 - Flat and solid Shapes - Section A](#)

[Math Learning Center Math Apps](#)

Classroom Routines – [Daily Planner Unit 1](#)

Classroom Routines – [Daily Planner Unit 2](#)

MLC: [Numbers & Combinations to 10 ~ the Year](#)

MLC: [The Kid Count Number Line](#)

MLC: [Oct Calendar supplement](#) (From K program, recommend use for Sept. Calendar)

MLC: [Oct. Calendar: Position Words](#)

TEDD - [Counting Collections](#)

[Choral Counting & Counting Collections](#) by Megan L. Franke, Elham Kazemi, and Angela Chan Turrou Stenhouse Publishers

[KCM Website for Primary Mathematics Support](#)

username: **bluegrass** password: **math** **great source for additional workshop tasks

[Math Tools](#)

[Number Talk Images](#)

Summative Assessment