

[KY Math Standards 2nd grade](#)[FCPS 2nd Grade Trajectory](#)[2nd Unit 4 Google Link](#)[2nd Grade Priority Content](#)

Title: Doubles, Sharing, and Making More: Flexibility to Fluency!		Estimated Time Frame: 40-55 days
Essential Standards: 2.OA.1, 2.OA.2, 2.NBT.1, 2.NBT.2, 2.NBT.5, 2.NBT.7, 2.NBT.9, 2.MD.8, 2.G.3, Supporting Standards: 2.OA.3, 2.OA.4, 2.G.2		
Big Idea(s) CRA explanations for 2nd grade Unit 4		
Building flexibility to fluency - flexible, efficient, accurate and appropriate choice of strategies		
Essential Questions:	Common Misconceptions:	
<ul style="list-style-type: none"> How can visualizing objects help us mentally solve problems efficiently? How do we use fractions in everyday life? How can making equal groups help me solve problems efficiently? 	Common Misconceptions: <ul style="list-style-type: none"> When creating fractions, use only the words halves, thirds, fourths. Since students are learning whole numbers, writing symbols, such as $\frac{2}{3}$, $\frac{1}{4}$ can lead to confusion between the meaning of whole numbers vs. fractional numbers. 	
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. 	
<p>Essential Standards: KAS Content Standards CRA explanations for 2nd grade Unit 4</p>	<p>Prerequisite Skills & Essential Vocabulary</p>	<p>Sample Learning Intentions* & Sample Success Criteria*</p>
<p>KY.2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, by using drawings and equations with a symbol for the unknown number to represent the problem. Coherence K.1.OA.1 → KY.2.OA.1 → KY.3.OA.8</p> <p>End Goal in Quarter 4: Solve one-step and two-step word problems by adding and subtracting within 100 with unknowns in all positions.</p>	<p>Add and subtract to solve all situation types involving one-step word problems.</p> <ul style="list-style-type: none"> ● Sum ● Difference ● Compare ● Total ● Take apart ● Put together ● Unknown ● Addend 	<p>I am learning to represent and solve one- and two-step word problems using drawings and equations.</p> <p>I can...</p> <ul style="list-style-type: none"> ● define the word unknown. ● identify the unknown in a one-step word problem. ● represent and solve a one-step word problem using drawings. ● represent and solve a one-step word problem using

<p>Suggested progression for the year, not intended to go through all these in one unit: see chart</p> <ol style="list-style-type: none"> 1. Numberless word problems 2. Add to/Take from with result unknown 3. Put together, take apart with result unknown 4. Put together, take apart with addend unknown 5. Add to, take from with change unknown 6. Comparison problems with difference unknown 7. Put together, take apart with both addends unknown 8. Comparison problems with bigger unknown, then smaller unknown 9. Add to, take from with start unknown 10. Comparison problems with bigger unknown, then smaller unknown 	<ul style="list-style-type: none"> ● Symbol ● Value ● Represent ● Solve 	<p>an equation with a symbol for the unknown number.</p> <ul style="list-style-type: none"> ● identify the unknowns in a two-step word problem. ● represent and solve a two-step word problem using drawings. ● represent and solve a two-step word problem using an equation with a symbol for the unknown number.
<p>KY.2.OA.2 Fluently add and subtract within 20 using mental strategies. End goal in Unit 4: Students should be able to add and subtract within 20 fluently. Coherence KY.1.OA.6→ KY.2.OA.2</p> <p>Suggested progression:</p> <ol style="list-style-type: none"> 1. two addends in range of 6 to 9 2. All facts to 20 mastered 3. Subtrahends within 20- subtrahends within 20 (20-11, 18-6) <p>Addition Fluency Chart</p>	<p>Fluency with the following basic addition facts: Near doubles (doubles +/- 1), Addends of 6 to 9 with addends of 1 to 4 (ex- 7+4, 9+3), Subtracting near doubles (13-7), and Subtrahends within 20- subtrahends within 4 (18-4, 17-3)</p> <ul style="list-style-type: none"> ● Double ● Equal ● Partition ● Combine ● Difference ● Sum ● Subitize ● Patterns ● Value ● Teen 	<p>I am learning to use strategies to add and subtract mentally within 20.</p> <p>I can...</p> <ul style="list-style-type: none"> ● Add and subtract using non-count-by-one strategies.

<p>KY.2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens and ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens — called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). Coherence KY.1.NBT.2→ KY.2.NBT.1→KY.3.NBT.1</p> <p>End goal in Unit 4: within numbers to 1,000</p> <p>Suggested progression:</p> <ol style="list-style-type: none"> 1. build numbers 100-250 using sticks and bundles 2. build numbers 100-250 using stickers 3. build numbers 250-500 using sticks and bundles 4. build numbers 250-500 using stickers 5. build numbers 500-750 using sticks and bundles 6. build numbers 500-750 using stickers 7. build numbers to 1,000 using sticks and bundles 2. build numbers to 1,000 using stickers <p>Hundreds, Tens, Ones charts can cause misconceptions when introduced before conceptual understanding is solid.</p>	<ul style="list-style-type: none"> ● Decompose <ul style="list-style-type: none"> ● Digit (base-ten numerals) ● Compare ● Equal ● Hundred ● Ten ● One ● Decompose 	<p>I am learning to represent numbers as amounts of hundreds, tens and ones.</p> <p>I can ...</p> <ul style="list-style-type: none"> ● represent one hundred as a bundle of ten tens. ● represent each digit in a three-digit number using hundreds, tens and ones. ● explain the value of each digit in a three-digit number. ● decompose a three-digit number in more than one way.
<p>KY.2.NBT.2 Count forwards and backwards within 1000; skip-count by 5s, 10s and 100s. Coherence KY.1.NBT.1→ KY.2.NBT.2</p> <p>End goal in Unit 4: Students should be able to count...</p> <ul style="list-style-type: none"> ● Forward and backward (FW/BW) by 1’s to/from 1,000 	<p>(See yearly progression)</p> <ul style="list-style-type: none"> ● Forward ● Backward ● Skip-count ● Place value 	<p>I am learning to count forwards and backwards to 1,000 in various ways.</p> <p>I can ...</p> <ul style="list-style-type: none"> ● Count forward/ backward by 5s from any number. ● Count forward/backward by

<ul style="list-style-type: none"> • by 10's ON decade FW/BW to/from 1,000 (230, 240, 250.../ 250, 240, 230...) • by 10's OFF decade FW/BW to/from 1,000 (412, 422, 432.../ 432, 422, 412...) • by 5's FW/BW from any multiple of 5 within 1,000 (265, 270, 275.../ 475, 470, 465...) • by 10's FW/BW to 1,000 from any number (352, 362, 372, .../ 372, 362, 352...) • by 100's FW/BW from any number to 1,000 (365, 465, 565.../ 565, 465, 365...) 		<p>10s from any number.</p> <ul style="list-style-type: none"> • Count forwards to 1,000 by 100's starting at any number. • Count backwards from 1,000 by 100's starting at any number.
<p>KY.2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations and/or the relationship between addition and subtraction. Coherence KY.1.NBT.4→ KY.2.NBT.5→KY.3.NBT.2</p> <p>End goal in Unit 4: Students can add and subtract within 100 mentally. Progression Poster</p> <p>Suggested Progression (for the entire year) Choose the best number range for your students based on where they are in the progression.:</p> <ol style="list-style-type: none"> 1. Use materials to add and subtract within 20. 2. Use visuals to add and subtract within 20. 3. Screen/ flash visuals to add and subtract within 20. 4. Mentally add and subtract within 20. 5. Use materials to add and subtract within 50. 6. Use visuals to add and subtract within 50. 7. Screen/ flash visuals to add and subtract within 50. 8. Mentally add and subtract within 50. 9. Use materials to add and subtract within 50. 10. Use visuals to add and subtract within 100. 11. Screen/ flash visuals to add and subtract within 100. 12. Mentally add and subtract within 100. 	<p>The understanding of place value and its importance when adding and subtracting within 100. Students should have previously encountered both physical materials and visuals to aid in solving these problems. Materials should be flashed or screened, but still available to help in solving problems.</p> <p>Extending their strategy usage in adding and subtracting within 20 to larger numbers. For example, students understand they can add numbers in parts. For $26 + 48$, they may add tens and then the ones or they see that $48+2=50$ and 24 more would equal 74.</p> <ul style="list-style-type: none"> • place value • fluently 	<p>I am learning to fluently add and subtract within 100.</p> <p>I can...</p> <ul style="list-style-type: none"> • fluently add and subtract numbers within 100 using place value. • fluently add and subtract numbers within 100 using properties of operations. • fluently add and subtract numbers within 100 using the relationship between addition and subtraction.

	<ul style="list-style-type: none"> ● Relationship ● inverse ● efficiently ● subitize ● add ● subtract ● take away ● minus ● plus 	
<p>KY.2.NBT.7 Add and subtract within 1000. a. Represent and solve addition and subtraction problems using...</p> <ul style="list-style-type: none"> • concrete models or drawings; • strategies based on place value; • properties of operations; • the relationship between addition and subtraction and; • relate drawings and strategies to expressions or equations. <p>b. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. Coherence KY.1.NBT.4→ KY.2.NBT.7→KY.3.NBT.2</p>	<p>Extending their strategy usage in adding and subtracting within 100.</p> <ul style="list-style-type: none"> ● add ● subtract ● concrete model ● drawings ● expressions ● equations 	<p>I can add and subtract within 1,000.</p> <p>I can...</p> <ul style="list-style-type: none"> ● Represent and solve addition/subtraction problems using concrete models or drawings. ● Relate concrete models and drawings to expressions and equations. ● Represent and solve addition/subtraction problems using place value strategies. ● Represent and solve addition/subtraction problems using the relationship between addition and subtraction. ● Relate strategies to add and subtract within 1,000 to expressions and equations.

<p>KY.2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. Coherence KY.1.OA.3→ KY.2.NBT.9</p> <p>Suggested Progression: 1. understand place value 2. add and subtract using place value (scaffold with materials and models) 3. students explain their strategies they use to solve the problem</p>	<ul style="list-style-type: none"> ● add ● subtract ● plus ● minus ● difference ● place ● value ● total 	<p>I am learning to explain how I solve addition and subtraction problems.</p> <p>I can...</p> <ul style="list-style-type: none"> ● solve problems using place value strategies. ● explain how I solved an addition/subtraction problem. ● explain why my strategies for adding and subtracting work.
<p>KY.2.MD.8 Solve word problems with adding and subtracting within 100, (not using dollars and cents simultaneously) using the \$ and ¢ symbols appropriately (not including decimal notation). KY.2.OA.1 Coherence KY.1.MD.3→ KY.2.MD.8</p>	<p>Identify coin names and their values.</p> <ul style="list-style-type: none"> ● word problem ● cents ● dollars ● symbols 	<p>I can solve word problems involving money.</p> <p>I can...</p> <ul style="list-style-type: none"> ● add cents to 100 (1dollar) ● add dollars to 100. ● subtract cents to 100. ● subtract dollars to 100. ● use the \$ and ¢ symbols appropriately.
<p>KY.2.G.3 Partition circles and rectangles into two, three, or four equal shares; describe the shares using the words halves, thirds, half of, a third of, etc.; and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. Coherence KY.1.G.3→ KY.2.G.3→KY.3.NF.1</p>	<p>Partition circles and rectangles into two and four equal shares and describe the shares using halves, fourths and quarters.</p> <ul style="list-style-type: none"> ● partition ● shares ● whole ● halves ● thirds ● fourths 	<p>I can partition circles and rectangles into equal shares and describe those parts.</p> <p>I can...</p> <ul style="list-style-type: none"> ● Partition circles and rectangles into two, three and four equal shares. ● Describe equal shares using words (halves, half of, thirds, a third of, fourths, a fourth

	<ul style="list-style-type: none"> • identical 	<p>of).</p> <ul style="list-style-type: none"> • Describe a whole as two halves, three thirds or four fourths. • Recognize that equal shares of identical wholes do not have to be the same shape.
<p>Supporting Standards:</p>		
<p>2.OA.3 Determine whether a group of objects has an odd or even number of members Coherence KY.1.OA.7→KY.2.OA.3→KY.3.OA.9</p>	<ul style="list-style-type: none"> • determine • odd • even • group • partner • object 	<p>I can determine if a group of objects is odd or even.</p> <p>I can...</p> <ul style="list-style-type: none"> • determine if each object in a group has a partner. • group objects to determine if each object has a partner. • determine if a number is odd or even.
<p>2.OA.4 Use addition to find the total number of objects arranged in arrays Coherence KY.1.OA.7→KY.2.OA.4→KY.3.OA.1</p> <p>Suggested progression:</p> <ul style="list-style-type: none"> • group objects/ manipulatives in an array • count number of items in rows and columns • used repeated addition to find the total of objects in array • Expectation is to work within 25 (5 rows by 5 columns) 	<ul style="list-style-type: none"> • array • arrange • objects • rows • columns 	<p>I can use addition to find the total number of objects in an array.</p> <p>I can...</p> <ul style="list-style-type: none"> • arrange objects in an array. • use repeated groups to add to find the total of a given array.
<p>2.G.2 Partition a rectangle into rows and columns of same-sized squares Coherence KY.2.G.2→KY.3.MD.6</p>	<ul style="list-style-type: none"> • partition • rows • columns 	<p>I can partition a rectangle into rows and columns of same-sized squares.</p>

<p>Suggested Progression:</p> <ol style="list-style-type: none"> partition a rectangle into equal rows. partition a rectangle in equal columns. partition a rectangle into equal rows and columns. 	<ul style="list-style-type: none"> equal 	<p>I can...</p> <ul style="list-style-type: none"> partition a rectangle into equal rows. partition a rectangle in equal columns. partition a rectangle into equal rows and columns.
<p>*Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. These examples are not comprehensive.</p>		
<p>Needed Manipulatives and Tools</p>	<p>Visuals</p>	
<p>number lines (student made or open/empty) Ten-frame Bundles and sticks (craft sticks and rubber bands or hair bands) Hundreds Charts Bead racks/ bead strings Math Journal Progression Poster</p>	<p>array pictures bead racks for arrays pictures of objects broken into fractions</p>	
<p>Anchor Resources/Materials</p>		
<p>Investigations Unit 7 Investigations Unit 8 Math Flips (Subtraction within 20) Math Flips (Addition/Subtraction within 100)</p>		
<p>Summative Assessment</p>		