

[KY Math Standards 2nd grade](#)

[FCPS 2nd Grade Trajectory](#)

[2nd Unit 3 Google Link](#)

[2nd Grade Priority Content](#)

Title: Let's Solve a Mystery!		Estimated Time Frame: 41 days
Essential Standards: 2.OA.1, 2.OA.2, 2.NBT.1, 2.NBT.2, 2.NBT.5, 2.NBT.6, 2.NBT.9, 2.MD.5, <i>Supporting Standards: 2.NBT.3, 2.NBT.4, 2.NBT.8, 2.MD.6, 2.MD.7, 2.MD.8, 2.G.1</i>		
Big Idea(s) CRA explanations for 2nd grade Unit 3		
Developing fluency with addition and subtraction within 100, using mental math, and place value to solve problems		
Essential Questions:		Common Misconceptions:
<ul style="list-style-type: none"> • How does counting help us solve problems? • How can visuals help us mentally solve problems? • How do I choose the best strategy for solving a problem? 		<ul style="list-style-type: none"> • For some students, seeing the relationship between $7+7$ (large doubles) and $7+8$ (doubles +1) is not obvious. Students need concrete examples of why this strategy works. A twenty bead rack is a good tool to model this relationship. • Be mindful to not overlook subtraction as the difference between two whole values and focus only on the take away model. Remember the 3 different types of subtraction problems: take away, comparison and missing subtrahend.

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 2nd grade Unit 3	Prerequisite Skills & Essential Vocabulary	Sample Learning Intentions* & Sample Success Criteria*
<p>KY.2.OA.1 Use addition and subtraction within 400 75 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>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>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.

<p>End Goal in Quarter 3: Solve one-step and two-step word problems by adding and subtracting within 75 with unknowns in all positions. 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 	<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> <p>Relating single digit combinations of 10 ($8+2=10$) to multiple of 10 combinations ($80+20=100$).</p> <ul style="list-style-type: none"> • Sum • Difference • Compare • Total • Take apart • Put together • Unknown • Addend • Symbol • Value • Represent • Solve 	<ul style="list-style-type: none"> • represent and solve a one-step word problem using an equation with a symbol for the unknown number. • 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 3: 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. Near doubles (doubles +/- 1) 	<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>	<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"> • identify which addition equations I could use the doubles +/-1 strategy to

<p>2. Addends of 6 to 9 with addends of 1 to 4 (ex- 7+4, 9+3)</p> <p>3. Subtracting near doubles (13-7)</p> <p>4. Subtrahends within 20- subtrahends within 4 (18-4, 17-3)</p> <p>Addition Fluency Chart</p>	<ul style="list-style-type: none"> ● Double ● Equal ● Partition ● Combine ● Difference ● Sum ● Subitize ● Patterns ● Value ● Teen ● Decompose 	<p>solve.</p> <ul style="list-style-type: none"> ● apply the strategy doubles +1/-1 to add and subtract. ● 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:</p> <p>a. 100 can be thought of as a bundle of ten tens — called a “hundred.”</p> <p>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).</p> <p>Coherence KY.1.NBT.2→ KY.2.NBT.1→KY.3.NBT.1</p> <p>End goal in Unit 3: within numbers to 750</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 <p>Hundreds, Tens, Ones charts can cause misconceptions when introduced before conceptual understanding is solid.</p>	<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 3: Students should be able to count...</p> <ul style="list-style-type: none"> • Forward and backward (FW/BW) by 1's to/from 500 • by 10's ON decade FW/BW to/from 500 (230, 240, 250.../ 250, 240, 230...) • by 10's OFF decade FW/BW to/from 500 (412, 422, 432.../ 432, 422, 412...) • by 5's FW/BW from any multiple of 5 within 100 (65, 70, 75.../ 75, 70, 65...) • by 10's FW/BW to 500 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>Skip counting forward and backward by 10's and 100's within 1,000 (on and off the decade).</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 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 3: Students can add and subtract within 100 using flashed or covered visuals. 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. 	<p>Use materials to add and subtract within 100.</p> <ul style="list-style-type: none"> • subitize • add • subtract • flash • take away • minus • plus • stickers • bundles • visualize • covered • screen 	<p>I am learning to use flashed visuals to add and subtract within 100.</p> <p>I can...</p> <ul style="list-style-type: none"> • add and subtract using flashed or covered visual representations of numbers within 100.

<p>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>		
<p>KY.2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations. Coherence KY.1.OA.2→ KY.2.NBT.6</p> <p>Suggested Progression: 1. add friendly numbers 2. add 2 numbers, then 3 numbers, then 4 numbers</p>	<ul style="list-style-type: none"> ● digit ● strategies ● place value ● operation ● add ● friendly number 	<p>I am learning to use strategies I know to add up to four two-digit numbers.</p> <p>I can...</p> <ul style="list-style-type: none"> ● add two 2-digit numbers. ● add three 2-digit numbers. ● add friendly numbers. ● add four 2-digit numbers.
<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. ● explain how I solved the problem. ● explain why my strategies for adding and subtracting work.

<p>KY.2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem. Coherence KY.2.MD.5→ KY.3.MD.2</p>		<p>I am learning to represent and solve word problems involving length using drawings and equations.</p> <p>I can...</p> <ul style="list-style-type: none"> • identify the unknown in a word problem involving length. • apply addition and subtraction strategies within 100 to solve length word problems using drawings. • apply addition and subtraction strategies within 100 to solve length word problems using an equation with a symbol for the unknown number.
<p>Supporting Standards:</p>		
<p>KY.2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names and expanded form. Coherence KY.1.NBT.1→ KY.2.NBT.3</p>	<p>Read, write and represent numbers within the range of 1-120.</p> <ul style="list-style-type: none"> • numeral • standard form • expanded form 	<p>I am learning to read and write numbers in many ways.</p> <p>I can...</p> <ul style="list-style-type: none"> • I can read numbers up to 1,000. • I can write numbers to 1,000 using numerals. • I can read and write numbers in words to 1,000. • I can read and write numbers within 1,000 in

		expanded form.
<p>KY.2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons. Coherence KY.1.NBT.13 \rightarrow KY.2.NBT.4</p>	<p>Compare two-digit numbers using appropriate symbols.</p> <ul style="list-style-type: none"> • compare • symbols • greater than • less than • equal • comparison • digit • value 	<p>I am learning to compare three-digit numbers using symbols.</p> <p>I can...</p> <ul style="list-style-type: none"> • identify the number of hundreds, tens and ones in a three-digit number. • use place value to compare two three-digit numbers. • represent the comparison of two three-digit numbers with symbols.
<p>KY.2.NBT.8 Mentally add 10 or 100 to a given number 100–900 and mentally subtract 10 or 100 from a given number 100–900. KY.1.NBT.6 Coherence KY.1.NBT.5 \rightarrow KY.2.NBT.8 \rightarrow 3.NBT.2</p>	<p>Mentally find 10 more or 10 less than a two-digit number without having to count.</p> <ul style="list-style-type: none"> • mentally • add • subtract 	<p>I am learning to mentally add and subtract within 1,000.</p> <p>I can...</p> <ul style="list-style-type: none"> • I can add 10 or 100 to any number within 1,000 using materials. • I can add 10 or 100 to any number within 1,000 using visuals. • I can mentally add 10 or 100 to any number within 1,000. • I can subtract 10 or 100 from any number within 1,000 using materials. • I can subtract 10 or 100 from any number within 1,000 using visuals.

		<ul style="list-style-type: none"> I can mentally subtract 10 or 100 from any number within 1,000.
<p>KY.2.MD.6 Represent whole numbers as lengths from 0 on a number line with equally spaced points corresponding to the numbers 0, 1, 2... and represent whole-number sums and differences within 100 on a number line. Coherence KY.2.MD.6→KY.3.NF.2</p> <p>Suggested Progression:</p> <ol style="list-style-type: none"> 0-25 0-50 0-75 0-100 bead strings quantity line <p>Number Line Jumps</p>	<ul style="list-style-type: none"> number line sum difference add subtract points equal space 	<p>I am learning to create and use a number line to represent addition and subtraction within 100.</p> <p>I can...</p> <ul style="list-style-type: none"> represent numbers 0-75 on a number line. represent numbers 0-100 on a number line. use a number line to solve addition problems. use a number line to solve subtraction problems. add and subtract using a number line.
<p>KY.2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. KY.2.NBT.2 Coherence KY.1.MD.3→KY.2.MD.7→KY.3.MD.1</p>	<p>Tell and write time in hours and half-hours using analog and digital clocks.</p> <ul style="list-style-type: none"> analog digital 	<p>I am learning to tell and write time using various types of clocks.</p> <p>I can...</p> <ul style="list-style-type: none"> explain the difference between a.m and p.m. tell time on a digital clock to the nearest five minutes. tell on an analog clock to the nearest five minutes. I can write the time to the nearest five

<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>Goal by end of Unit: Add same value coins within 75 ¢, increase the range throughout the year and make a combination of coins to represent a value.</p>	<p>Identify coin values and names.</p> <ul style="list-style-type: none"> total value set 	<p>I am learning to solve addition and subtraction problems involving money.</p> <p>I can...</p> <ul style="list-style-type: none"> find the total value of a set of coins. add to solve word problems involving money. subtract to solve word problems involving money.
<p>KY.2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or sides. Identify triangles, quadrilaterals, pentagons, hexagons and cubes (identify number of faces). Coherence KY.1.G.1→KY.2.G.1→KY.3.G.1</p>	<p>Build and draw shapes based on defining and non-defining attributes.</p> <ul style="list-style-type: none"> attribute angles sides vertex faces corner triangle quadrilateral pentagons hexagons cubes 	<p>I am learning to recognize and draw shapes based on their attributes.</p> <p>I can...</p> <ul style="list-style-type: none"> I can identify shapes based on their number of angles and sides. I can identify the number of faces of a cube. I can draw shapes based on their number of angles and sides.
<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>sticker images shapes coin cards bead racks/ bead strings number lines</p>
<p>Anchor Resources/Materials</p>	
<p>Investigations Unit 5 Investigations Unit 2 Math Flips (Doubles/Doubles +1) Math Flips (Addition/Subtraction within 100)</p>	
<p>Summative Assessment</p>	