2nd Grade Math (1st and 2nd grade CAP)

Course Essential Questions:
- How do the digits in a three digit number relate to each other?
- How does knowing multiple strategies help in solving addition and subtraction word problems?
- How does choosing the appropriate tool aid in measuring lengths?
- What are some real-world application where shapes are composed and decomposed to create other shapes?
- How does mathematics help us in finding patterns and relationships in the real-world?

MAJOR CLUSTERS	- areas of intensive focus, where students need fluent understanding and application of the core concepts.	*approximately 70%*
SUPPORTING CLUSTERS	- rethinking and linking; areas where some material is being covered, but in a way that applies core understandings.	*approximately 20%*
ADDITIONAL CLUSTERS	- expose students to other subjects, though at a distinct, level of depth and intensity.	*approximately 10%*

Tier 3 Vocabulary Words are highlighted in yellow

Unit: Addition and Subtraction

Essential Questions:	**Essential Understanding:**
• What strategies can be used to solve addition word problems?	• Composing and decomposing numbers lead to understanding word problems • Numbers be put together and taken apart to solve problems • An unknown quantity can be represented in an equation • Visual representations can be used to depict addition and subtraction

Curriculum Standards- DOK noted where applicable with Standards

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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Table 2: Addition and subtraction situations by grade level.

	Result Unknown	Change Unknown	Start Unknown
Add To	A bunnies sat on the grass. B more bunnies hopped there. How many bunnies are on the grass now? $A + B = \square$	A bunnies were sitting on the grass. Some more bunnies hopped there. Then there were C bunnies. How many bunnies hopped over to the first A bunnies? $A + \square = C$	Some bunnies were sitting on the grass. B more bunnies hopped there. Then there were C bunnies. How many bunnies were on the grass before? $\square + B = C$
Take From	C apples were on the table. I ate B apples. How many apples are on the table now? $C - B = \square$	C apples were on the table. I ate some apples. Then there were A apples. How many apples did I eat? $C - \square = A$	Some apples were on the table. I ate B apples. Then there were A apples. How many apples were on the table before? $\square - B = A$

	Total Unknown	Both Addends Unknown[1]	Addend Unknown[2]
Put Together /Take Apart	A red apples and B green apples are on the table. How many apples are on the table? $A + B = \square$	Grandma has C flowers. How many can she put in her red vase and how many in her blue vase? $C = \square + \square$	C apples are on the table. A are red and the rest are green. How many apples are green? $A + \square = C$ $C - A = \square$

	Difference Unknown	Bigger Unknown	Smaller Unknown
Compare	*"How many more?"* version. Lucy has A apples. Julie has C apples. How many more apples does Julie have than Lucy? *"How many fewer?"* version. Lucy has A apples. Julie has C apples. How many fewer apples does Lucy have than Julie? $A + \square = C$ $C - A = \square$	*"More" version suggests operation.* Julie has B more apples than Lucy. Lucy has A apples. How many apples does Julie have? *"Fewer" version suggests wrong operation.* Lucy has B fewer apples than Julie. Lucy has A apples. How many apples does Julie have? $A + B = \square$	*"Fewer" version suggests operation.* Lucy has B fewer apples than Julie. Julie has C apples. How many apples does Lucy have? *"More" version suggests wrong operation.* Julie has B more apples than Lucy. Julie has C apples. How many apples does Lucy have? $C - B = \square$ $\square + B = C$

Darker shading indicates the four Kindergarten problem subtypes. Grade 1 and 2 students work with all subtypes and variants. Unshaded (white) problems are the four difficult subtypes or variants that students should work with in Grade 1 but need not master until Grade 2. Adapted from CCSS, p. 88, which is based on *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity*, National Research Council, 2009, pp. 32–33.

==2.NBT.5(required fluency)== Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

MP-Make sense of problems and persevere in solving them
MP-Reason abstractly and quantitatively
MP-Construct viable arguments and critique the reasoning of others
MP-Model with mathematics
MP-Use appropriate tools strategically
MP-Attend to precision
MP-Look for and make use of structure
MP-Look for and express regularity in repeated reasoning

LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● Parts of a whole is one interpretation of addition.	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Join two groups and write addition number sentences to tell

● <mark>Addition</mark> numbers sentences can be used to show part of a whole ● Joining parts to make a whole is one interpretation of addition. ● That addition number sentences can be used to show joining parts of a whole. ● Separating parts from a whole and comparison are two interpretations of subtraction. ● Subtraction number sentences can be used to show separating parts from a whole or comparison subtraction situations. ● Addition and subtraction have an inverse relationship. ● The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact.	how many in all ● Model joining stories and write an addition number sentences ● Solve problems by writing subtraction number sentences ● Solve stories about separating group ● Write subtraction sentences to solve stories about comparing groups ● Write related addition and subtraction facts ● Use counters to model and solve addition and subtraction facts

Unit: Addition Strategies	
Essential Questions: • What strategies can be used to solve one digit addition facts?	**Essential Understanding:** ● Drawings and equations can be used to solve real world addition problems.

Curriculum Standards- DOK noted where applicable with Standards

2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

2.0A. 2 (required fluency) Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanation may be supported by drawings or objects.)

MP-Make sense of problems and persevere in solving them
MP-Reason abstractly and quantitatively
MP-Construct viable arguments and critique the reasoning of others
MP-Model with mathematics
MP-Use appropriate tools strategically
MP-Attend to precision
MP-Look for and make use of structure
MP-Look for and express regularity in repeated reasoning

LEARNING TARGETS	

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● The number relationships of 0-more-than, 1-more-than, and 2-more-than are the basis for addition facts with 0, 1, and 2 ● Doubles facts can be associated with memorable real-world situations. ● Basic addition facts that are near doubles can be found using a related doubles fact. ● Addition facts involving 9 can be changed to an equivalent fact with 10. ● Addition facts involving 8 can be changed to an equivalent fact with 10. ● Two numbers can be added in any order. ● Three or more whole numbers can be grouped and added in any order. ● Information in a problem can often be shown using a picture or diagram and used to understand and solve the problem. ● Some problems can be solved by writing and	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Add 0,1, 2 ● Add doubles facts ● Use doubles facts to solve near doubles problems ● Change the order of addends in addition facts ● Add three numbers in any order ● Make ten to help me add ● Draw pictures and write number sentences to solve story problems

completing a number sentence or equation.	

Unit: Subtraction Strategies	
Essential Questions: • What strategies can be used to solve one digit subtraction facts?	**Essential Understanding:** ● There are multiple strategies that can be used to fluently add and subtract to 20. ● Drawings and equations can be used to solve real world subtraction problems.

Curriculum Standards- DOK noted where applicable with Standards

2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

2.0A. 2 (required fluency) Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanation may be supported by drawings or objects.)

MP-Make sense of problems and persevere in solving them
MP-Reason abstractly and quantitatively
MP-Construct viable arguments and critique the reasoning of others
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MP-Use appropriate tools strategically
MP-Attend to precision
MP-Look for and make use of structure
MP-Look for and express regularity in repeated reasoning

LEARNING TARGETS

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● The number relationships of 0-less-than, 1-less-than, and 2-less-than are the basis for subtraction facts with a 0, 1, and 2. ● Addition and subtraction have an inverse relationship. The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact. ● Some subtraction facts can be found by subtracting from the minuend (the larger number) an amount to get to 10 and then subtracting the amount that remains. ● Sometimes the answer to one problem or question is needed to find the answer to another problem or question.	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Subtract 0,1,2 from greater numbers ● Use doubles to help me subtract ● Use addition facts to subtract ● Make 10 to help me subtract ● Solve 2 step story problems

updated 4/16/2015

Unit: Working with equal groups	
Essential Questions: • How can equal groups be used to represent multiplication?	**Essential Understanding:** ● Using repeated addition and arrays to join equal groups is a representation of multiplication.

Curriculum Standards- DOK noted where applicable with Standards
2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **2.0A.4** Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. **MP-Make sense of problems and persevere in solving them** MP-Reason abstractly and quantitatively MP-Construct viable arguments and critique the reasoning of others **MP-Model with mathematics** MP-Use appropriate tools strategically MP-Attend to precision **MP-Look for and make use of structure** **MP-Look for and express regularity in repeated reasoning**

LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● Repeated addition involves joining equal groups ● An array involves joining equal groups in rows and columns and is one way to think about repeated addition. ● Information in a problem can often be shown using a diagram and used to solve the problem. ● Some problems can be solved by writing and completing a number sentence or equation.	● Use repeated addition to write number sentences and solve word problems ● Use an array to write and solve repeated addition sentences ● Use repeated addition to solve problems ● Draw pictures and then write number sentences to help me solve repeated addition problems.

Unit: Place Value to 100

Essential Questions:	Essential Understanding:
• What do the digits represent in a two digit number? • How can you compare numbers? • How can you determine if a number is odd or even?	● The three digits of a three digit number represent amounts of hundreds, tens and ones. ● Numbers can be compared using <,>,= symbols. ● Numbers can be compared using base-10 numerals, number names, and expanded form. ● Some numbers can be divided into two equal parts (even) and some cannot (odd).

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases

2.NBT.1a Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens—called a "hundred."

2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.3 Read and write numbers to 1000 using base-ten numerals, numbers names, and expanded form.

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 and comparisons.

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanation may be supported by drawings or objects.)

2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of member. E.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

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updated 4/16/2015

LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● numbers can be written in multiple forms including number names, expanded and standard forms. ● how to skip count by 5's, 10's, and 100's within 1000. ● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● The number relationships of 0-more-than, 1-more-than, and 2-more-than are the basis for addition facts with 0, 1, and 2 ● Doubles facts can be associated with memorable real-world situations. ● Basic addition facts that are near doubles can be found using a related doubles fact. ● Addition facts involving 9 can be changed to an equivalent fact with 10. ● Addition facts involving 8 can be changed to an equivalent fact with 10. ● Two numbers can be added in any order. ● Three or more whole numbers can be grouped and added in any order. ● Information in a problem can often be shown using a picture or diagram and used to understand and solve the problem. ● Some problems can be solved by writing and completing a number sentence or equation.	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Show groups of tens and ones ● Read and write numbers to 1000 using base ten numerals, number names, expanded form ● Compare numbers by using symbols greater than >, less than <, equal = ● Use the words before and after to describe the position of numbers to count on and count back ● Can identify and write numbers that are 10 more or 10 less than a given numbers. ● Identify even and odd numbers ● Use data from charts to solve problems

Unit: Mental Addition

Essential Questions:	Essential Understanding:
• How can numbers be fluently added within 100 using multiple strategies?	● Numbers can be fluently added using a hundred chart, counting on and adding tens and ones to a given number.

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.2.Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

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.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawing or objects.)

2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

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LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● Adding tens is like adding ones. ● When adding a number less than ten to a two-digit number using the traditional algorithm, it may be necessary to rename 10 ones as 1 ten. ● Two-digit numbers can be broken apart using tens and ones and added in different ways. ● Patterns on a hundred chart can be used to ass numbers and to develop mental math strategies and number sense. ● Adding groups of tens is similar to adding numbers less than 10. ● Some problems can be solved by identifying elements that repeat in a predictable way.	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Use mental math to add 10's ● Add two numbers to make the next 10 ● Mentally add the tens and ones of 2 digit numbers ● Use hundreds chart to add tens and ones of 2 digit numbers ● Add groups of 10 ● Find patterns to help solve problems

Unit: Mental Subtraction

Essential Questions:	Essential Understanding:
● How can numbers be subtracted mentally?	● Using knowledge of basic facts, students can compute by adding on, a hundreds chart, tens frames. Etc.

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or relationship between addition and subtraction; relate the strategy to a written method. 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.

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.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawing or objects.)

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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

MP-Make sense of problems and persevere in solving them
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LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● Subtracting tens is like subtracting ones. ● TO find parts of 100, add on ones to make a ten and count on by tens to reach 100. ● Patterns in a hundred chart can be used to subtract numbers and to develop mental math strategies and number sense. ● Subtracting groups of tens is similar to subtracting numbers less than 10. ● Some problems have data missing needed to find the answer, and some problems have extra data not needed to solve the problem.	● decompose any number within 1000 into hundreds, tens, and ones ● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Use mental math to subtract 10 ● Find the missing part of 100 by adding on ● Use a hundred chart to subtract 2 digit numbers ● Subtract by using multiples of 10 ● Solve problems with missing or extra information

updated 4/16/2015

Unit: Adding Two-digit Numbers

Essential Questions:	Essential Understanding:
● How can numbers be added within 100 using multiple strategies?	● Multiple strategies such as modeling, regrouping, mental math and paper pencil, can be used to add numbers within 100.

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawing or objects.)

2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, …, and represent whole-number sums and differences within 100 on a number line diagram.

2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

MP-Make sense of problems and persevere in solving them
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LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● 10 ones can be regrouped for 1 ten. ● The standard addition algorithm for two-digit and one-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones and then the tens. Answers to the simpler calculations are used to give the final sum. ● The standard algorithm for adding two-digit and two-digit numbers is just an extension of the algorithm for adding two-digit and one-digit numbers. The ones are added first and then the tens. ● All sums and differences can be found using	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Decide when I need to regroup ● Use objects to find the sum of a one digit number and two digit numbers ● Use objects to show adding a one digit number to a two digit number ● Use paper and pencil to add a one digit number to a two digit number ● Use objects and a two digit addition frame to add two digit numbers ● Use paper and pencil to add 2, two digit numbers ● Add two digit numbers using a number line. ● Add more than 2 numbers in any order ● Choose different methods to solve 2 digit addition problems

updated 4/16/2015

models (cubes). Some calculations are done easily using mental math or paper and pencil. More complex calculations can be done using a calculator. ● Sums can be represented as lengths on a number line diagram of addition. ● Three and four two-digit numbers can be grouped and added in any order. ● Information in a problem can often be shown using a diagram to solve the problem. Some problems can be solved by writing and completing a number sentence or equation.	● Use part-part-whole models and number sentences to solve problems

Unit: Subtracting Two-Digit Numbers	
Essential Questions: • How can numbers be fluently subtracted within 100 using multiple strategies?	**Essential Understanding:** ● There are several strategies like number lines, adding to subtract, and regrouping that can be used to subtract.

Curriculum Standards- DOK noted where applicable with Standards
2.NBT.5 (required fluency) Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.NBT.6** Add up to four two-digit numbers using strategies based on place value and properties of operations. **2.NBT.9** Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawing or objects.) **2.MD.6** Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, …, and represent whole-number sums and differences within 100 on a number line diagram. **2.0A.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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **MP-Make sense of problems and persevere in solving them** **MP-Reason abstractly and quantitatively** **MP-Construct viable arguments and critique the reasoning of others** **MP-Model with mathematics** MP-Use appropriate tools strategically MP-Attend to precision **MP-Look for and make use of structure** **MP-Look for and express regularity in repeated reasoning**

LEARNING TARGETS	
Knowledge/Content **I Know …**	**Skills/Processes** **I Can …**
● strategies for adding and subtracting based on place value, properties of operations, and relationships between addition and subtraction ● 1 ten can be regrouped for 10 ones ● The standard subtraction algorithm breaks the calculation into simpler calculations starting with the ones and then the tens. ● The standard algorithm for subtracting two-digit and two-digit numbers is just an extension of the algorithm for subtracting two-digit and one-digit numbers. ● All sums and differences can be found using models (cubes). Some calculations are done easily using mental math or paper and pencil. More complex calculations can be done using a calculator. ● Differences can be represented as lengths in a number line diagram of subtraction.	● choose a strategy (place value, properties of operations, and/or the relationship between addition and subtraction) to fluently add and subtract within 100. ● Use objects to help me subtract tens and ones ● Use objects to help regroup, subtract, and record work ● Use paper and pencil to subtract, regroup when I need to. ● Use objects to help subtract 2 digit numbers from 2 digit numbers ● Use paper and pencil to subtract 2 digit numbers ● Use a number line to subtract 2 digit numbers ● Use addition to check subtraction ● Use different methods to solve 2 digit subtraction problems ● Use addition or subtraction to solve 2 part questions

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● The inverse relationship between addition and subtraction can be used to check subtraction. ● Sometimes the answer to one problem/question is needed to find the answer to another problem/question.	

Unit: Place Value to 1,000	
Essential Questions: • How does the place or position of a number affected the value of each digit in the number?	**Essential Understanding:** ● Numbers can be compared and ordered by looking at the left most place value and working toward the right.

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.1.a 100 can be thought of as a bundle of ten tens—called a "hundred."

2.NBT.1.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).

2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

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.

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.

MP-Make sense of problems and persevere in solving them
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LEARNING TARGETS	

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● Numbers can be used to tell how many. ● Our number system is based on groups of ten. Whenever we get 10 in one place value, we move to the next greater place value. ● Adding or subtracting hundreds or tens is similar to adding or subtracting single-digit numbers. ● Counting and place-value patterns can be seen on a hundreds chart. ● Number lines can help with skip counting. ● Place value can be used to compare and order numbers. ● Ordering three or more numbers is similar to comparing two numbers because each number must be compared to each of the other numbers. ● Some problems can be solved by identifying elements that repeat in a predictable way.	● Count by 1,000 by hundreds ● Use place value models to show hundreds, tens and ones ● Write numbers in expanded form, standard form, and number words ● Add and subtract multiples of 10 and 100 ● Identify patterns in numbers to 1,000 ● Skip count on a number line ● Compare numbers using greater than >, less than <, and equal to = ● Compare numbers and put them in order from least to greatest and greatest to least. ● Solve problems using number patterns

updated 4/16/2015

Unit: Three Digit Addition and Subtraction	
Essential Questions: • How can numbers be fluently subtracted and added within 1000 using multiple strategies?	**Essential Understanding:** ● In adding and subtracting three-digit numbers one needs to add or subtract 100s and 100s, 10s and 10s, 1s and 1s. ● Sometimes it is necessary to compose and decompose 10s and 100s.

Curriculum Standards- DOK noted where applicable with Standards

2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. 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.

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.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties and operations.

MP-Make sense of problems and persevere in solving them
MP-Reason abstractly and quantitatively
MP-Construct viable arguments and critique the reasoning of others
MP-Model with mathematics
MP-Use appropriate tools strategically
MP-Attend to precision
MP-Look for and make use of structure
MP-Look for and express regularity in repeated reasoning

LEARNING TARGETS

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● There are a variety of ways to add three-digit numbers. ● There is more than one way to do a mental calculation. Techniques for doing addition or subtraction calculations mentally involve changing the numbers or the expression so the calculation is easy to do mentally. ● The standard addition algorithm for three-digit numbers breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and then the hundreds. ● There is a variety of ways to subtract three-digit numbers. ● The standard subtraction algorithm for three-digit numbers breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and then the hundreds. ● Some problems can be solved by reasoning about the conditions in the problem.	● Add 3 digit numbers in different ways ● Add 3 digit numbers mentally ● Use place value blocks to add 3 digit numbers with regrouping ● Add 3 digit numbers and decide when to regroup ● Subtract 3 digit numbers in different ways ● Count on or count back by 100' and 10's to find missing parts ● Use place value blocks to find the difference between 2 and 3 digit numbers ● Subtract 3 digit numbers ● Use logic and careful thinking to solve riddles.

Unit: Geometry

Essential Questions:	**Essential Understanding:**
• How can shapes having specified attributes be recognized and drawn? • How can plane shapes be partitioned into fractional parts and equal shapes?	● Objects can be describes and compared using their geometric attributes.

Curriculum Standards- DOK noted where applicable with Standards

2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.)

2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

2.G.3 Partition circles and rectangles into two, three, or four equal shared, describe the shares using the words halves, thirds, half or 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.

MP-Make sense of problems and persevere in solving them

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LEARNING TARGETS

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● Three-dimensional or solid figures have length, width, and height. Many can be described, classified, and analyzed by their faces or flat surfaces, edges, and vertices. Many everyday objects closely approximate standard geometric solids. ● A shape can be identified by the number of its sides, veritices, or angles. ● attributes of quadrilaterals, pentagons, hexagons ● Some shapes can be combined to make new shapes. ● Some shapes can be decomposed into other shapes. ● What a partition is ● Rectangles can be partitioned into equal squares. ● A region can be divided into equal-sized parts like in different ways. (eg., like thirds and halves) ● Equal-sized parts of a region have the same area but not necessarily the same shape. ● Some problems can be solved by reasoning abut the conditions in the problem.	● Identify solid figures by their faces, flat surfaces, edges and vertices ● Identify plane shapes that form flat surfaces of solid figures ● Draw and identify polygons and list their attributes ● Describe and analyze shapes by examining their sides and angles, not by measuring ● Compare shapes by their attributes (e.g., faces, angles) ● Use smaller shapes to make larger shapes. Then I can identify the number of sides and vertices of that larger shape ● Cut apart a larger shape to make smaller shapes ● Divide rectangles into same-size squares and count them accurately ● Identify a row and a column ● Find and make equal parts ● Use clues to identify plane shapes and solid figures

updated 4/16/2015

Unit: Counting Money	
Essential Questions: • How can money be counted?	**Essential Understanding:** ● Each coin has a value. Money is counted by, beginning with the coin of greatest value. Then count down in order to the smallest coin in the collection.

Curriculum Standards- DOK noted where applicable with Standards

2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢symbols appropriately.

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LEARNING TARGETS

Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● Specific coins or bills each have a unique value. ● The size of the coin does not indicate the value. ● Money amounts can usually be counted in different ways. ● When counting money, it is usually easier to start with the coin or bill with the greatest value. ● The same amount of money can often be represented using different combinations of coins and bills. ● Some problems can be solved by generating a list of outcomes and organizing that list in a systematic way so all outcomes are accounted for.	● Count different kinds of coins ● Find the total value of different collections of coins by counting on from the coin with the greatest value to the coin with the least value ● Make the same amount of money using different coins ● Learn how to write and say dollar amounts ● Make an organized list to help show all the ways to make a certain amount of money

updated 4/16/2015

Unit: Money	
Essential Questions: • How can word problems involving money be solved? • How are $ and ₵ used in word problems appropriately?	**Essential Understanding:** ● Word problems involving money can be solved by using addition and subtraction with two digit coin amounts. ● Word problems involving money can be solved using estimation and try, check and revise.

Curriculum Standards- DOK noted where applicable with Standards
2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.   **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.   **2.NBT.9** Explain why addition and subtraction strategies work, using place value and the properties and operations.   **MP-Make sense of problems and persevere in solving them**   **MP-Reason abstractly and quantitatively**   **MP-Construct viable arguments and critique the reasoning of others**   MP-Model with mathematics   MP-Use appropriate tools strategically   **MP-Attend to precision**   MP-Look for and make use of structure   MP-Look for and express regularity in repeated reasoning

LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● the value of dollar bills, quarters, dimes, nickels, and pennies (cents) ● the $ and cent symbols ● The process for adding money, written using cent notation, is the same as adding whole numbers. ● The process for subtracting money, written using cent notations, is the same as subtracting whole numbers. ● Rounding can be used to estimate sums and differences as can place value and number relationships. ● Some problems can be solved by making a reasoned first try for what the answer might be and then through additional reasoning arrive at the correct answer.	● Learn how to add money amounts in cents ● Subtract money amounts in cents and record the cent symbol ● Estimate a sum to see if you have enough money to buy two items and estimate a difference to see if you have more or less money left over ● Use try, check, and revise problem - solving strategy to solve two-digit addition and subtraction problems involving money

Unit: Measuring Length	
Essential Questions: • How can length be measured?	**Essential Understanding:** ● The process for measurement is the same for anything being measured. First identify the attribute being measured (ex: length). Second, select an appropriate unit. Then compare the unit to the object. Finally, report the number of units.

Curriculum Standards- DOK noted where applicable with Standards

2.MD.1 Measuring the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

2.MD.4 Measure to determine how much longer one object is than another, expression the length difference in terms of a standard length unit.

2.MD.5 Use addition and subtraction within 100 to solve world problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

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LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● tools used for measuring (eg.,ruler, yardstick, meter stick, and measuring tape) ● The length of some objects is measurable. ● The length of an object can be used as a measurement unit for length, but a standard unit, such as an inch, centimeter, foot, meter, or yard is always the same length. ● The length of an object can be used as a measurement unit for length, but a standard unit is always the same length. ● Measurement in the same unit like inches can be added or subtracted in the same way as adding and subtracting whole numbers. The measurement unit needs to be written with the same sum or difference.	● Measure the lengths of objects to the nearest inch ● Measure objects to the nearest centimeter ● Estimate the length of objects in inches and learn how to estimate and measure the length of objects in feet and yards ● Estimate and measure the length of objects in centimeters, and learn how to estimate and measure the length of objects in meters ● Use different units to measure the height and length of objects ● Use addition and subtraction to solve measurement problems ● Add to find the length of paths, then subtract to compare the lengths of paths ● Use a string and a ruler to find the measurements of

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● The length of two objects can be compared by subtracting to find the difference. ● Some problems can be solved by using objects to act out the actions in the problem.	objects that are not straight

Unit: Time, Graphs, and Data	
Essential Questions: • How can time be expressed using different units? • What are the different ways data can be organized?	**Essential Understanding:** ● There is more than one way to show time on a clock(5:45, 45 minutes after 5, quarter to 6). ● There is more than one way data can be organizes (bar graphs, tally charts, pictographs).

Curriculum Standards- DOK noted where applicable with Standards

2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole number units.

2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

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LEARNING TARGETS

Knowledge/Content I Know …	Skills/Processes I Can …
● Time can be given to the nearest five minutes. ● Time can be expressed using different units that are related to each other. A.M. and P.M. are used to designate certain time periods. ● Time can be expressed before or after the hour. ● Data can be organized in different ways. ● The lengths of objects can be organized in different ways. ● A line plot can be used as a visual representation of the relative lengths of objects. ● Each type of graph is most appropriate for certain kinds of data. ● Pictographs and bar graphs make it easy to compare data. ● Some problems can be solved by making, reading, and analyzing a graph.	● Tell time using analog and digital clocks to the nearest 5 minutes ● Tell time using the vocabulary terms, quarter past, half past, and quarter to the hour ● Write time using analog and digital clocks ● Identify the hour and minute hand on an analog clock ● Identify and label when a.m. and p.m. occur ● Show the same data in different ways ● Measure lengths and make a line plot to show length of an object ● Read data on a tally chart and use that information to make a pictograph ● Use information from bar graphs to solve problems

updated 4/16/2015