

Grade 2 Mathematics	Unit 11 – 3-Digit Addition and Subtraction
Big Idea/Rationale:	In this unit, children will extend their understanding of addition and subtraction to three-digit numbers. They will continue to group and ungroup as necessary. Good explanations and good questions using hundreds, tens, and ones language are emphasized as much as finding solutions to problems. Children will use Secret Code Cards and Proof Drawings as aids for addition and subtraction.
Enduring Understandings:	<p>Students will understand that:</p> <ul style="list-style-type: none"> • A numeration system is a system for naming numbers. • An understanding of place value allows children to compare numbers. • Children develop an understanding of our numeration system by repeated experiences counting objects. • There are many symbolic and pictorial ways to represent numbers. • Numbers can be used, classified, and represented in different ways. • Relationships can be described and generalizations made for mathematical situations that have numbers or objects that repeat in predictable ways.
Essential Questions:	<ul style="list-style-type: none"> • How can you find the value of a group of dollars, quarters, dimes, nickels, pennies? • How do you show \$10.00 with different groups of coins and bills? • How do you count combinations of money that include both bills and coins? • How can an organized list show the different ways to make the same amount of money? • When subtracting, how do you know when you need to ungroup or trade? • How can you use paper and pencil to subtract a one-digit numbers from a two-digit numbers? • How can you use addition to check subtraction? • How can you use ones to make tens, and tens to make hundreds? • In a three-digit number, can you use manipulatives to show what the first and second and third digits tell us? • What happens if you change the places of the digits in a three-digit number? • How can you add a one- two-, or three-digit number to a three-digit number?
Lesson Objectives:	<ul style="list-style-type: none"> • Count to 1,000 by hundreds. • Represent a 3-digit number with boxes, sticks and circles. • Count from a 3-digit number into the next hundred. • Differentiate between hundreds, tens, and ones, and place them in the correct order. • Count by ones and tens over a hundred, from a number more than 100

to a number less than 1,000.

- Estimate quantities (up to 1,000).
- Group objects into tens and hundreds.
- Recognize that 10 ones are equal to a ten and that 10 tens are equal to a hundred.
- Represent addition exercises to show place value.
- Apply knowledge of place value to story problems with groups of ten and a hundred and leftover ones.
- Make twenty-five cents with combinations of dimes, nickels, and pennies.
- Use the dollar sign and decimal point to write dollar amounts.
- Buy and sell goods using exact money amounts.
- Buy and sell goods using a five-dollar bill, and make change.
- Explain how to make change from a five-dollar bill.
- Group numbers when adding over a hundred.
- Explain the methods used to solve addition story problems.
- Discuss good explanations and good questions.
- Invent ways to solve addition problems in which both numbers have three digits.
- Organize data in a table.
- Use information from a table to solve problems.
- Add 3-digit money amounts.
- Present good explanations of methods used to solve numeric addition exercises.
- Practice solving 2- and 3- digit addition exercises.
- Use the Adding up Method to solve unknown partner exercises containing 3-digit numbers.
- Use the Adding up Method to make change.
- Create and solve story problems involving 3-digit subtraction.
- Subtract 3-digit numbers with a zero in the ones or tens place of the top number.
- Create story problems involving 3-digit subtraction.
- Subtract 3-digit numbers using ungrouping.
- Subtract money amounts.
- Solve story problems involving money amounts.
- Subtract from any 3-digit number, with or without ungrouping.
- Represent subtraction of any 3-digit number.
- Recognize whether or not ungrouping is necessary to subtract 3-digit numbers.
- Practice ungrouping.
- Discriminate between addition and subtraction situations and apply the appropriate operation.
- Use addition to check subtraction and subtraction to check addition.
- Discriminate between addition and subtraction situations and apply the

	<p>appropriate operation.</p> <ul style="list-style-type: none"> • Subtract money amounts from \$10. • Buy and sell goods. • Solve a variety of problems using mathematical concepts and skills. • Use mathematical processes in the context of problem solving, connections, reasoning and proof, communication, and representation.
<p>Common Core State Standards:</p>	<ul style="list-style-type: none"> • 2.0A.B.2: 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.A.1: Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and one; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: • 2.NBT.A.1.A: 100 can be thought of as a bundle of ten tens – called a “hundred.” • 2.NBT.A.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.A.2: Count within 1000, skip-count by 5s, 10s, and 100s. • 2.NBT.A.3: Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. • 2.NBT.A.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.B.7: Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of 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 sometime it is necessary to compose or decompose tens or hundreds. • 2.NBT.B.9: Explain why addition and subtraction strategies work, using place value and the properties of operations. • 2.MD.B.5: Use addition and subtraction within 100 to solve word 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. • 2.MD.C.8: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and c symbols appropriately. • 2.G.A.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. <p>Mathematical Practices</p>
<p>Materials and Resources:</p>	<p>Grade 2 Math Expressions, Math Journals, manipulatives, IXL Mathematics</p>