Grade: 1 Subject: Mathematics	Unit of Study: Unit 2 - Operation and Simple Equations
Big Idea/Rationale	• Unit 2 reviews and builds on the use of break-aparts of numbers as components of a math equation. Children also are introduced to standard math notation. They begin to translate what they have learned about the concept of equality and the relationship between part and whole from the concrete world into symbolic equations. • Represent Addition Stories • Solve Addition Equations • Solve Subtraction Equations • Equation Explorations
Enduring Understanding	Students will understand that: • Describing numbers in terms of two parts provides the foundation for understanding addition. • Doing mathematics involves a variety of processes including problem solving, reasoning, communicating, connecting, and representing. • Creating a plan and systematically finding the solution to a problem provides the foundation for problem solving. • Some problems can be solved by using objects to act out the actions in the problem. • Addition and subtraction have an inverse relationship.
Essential Questions	• What is addition? • When do we need to add things together? • How do pictures help us solve number problems? • What are inequalities? • What is subtraction? • How can it help us separate things? • Why should we know subtraction?
Content (Subject Matter)	• Represent and solve addition story problems with pictures. • Visualize equalities with partners and totals. • Represent and solve addition story problems with circle drawings. • Visualize equalities with partners and totals. • Introduce the concepts of equality and inequality. • Introduce and write addition equations. • Use = and #. • Represent and solve addition story problems with symbolic drawings. • Generate addition equations. • Recognize reasonable and unreasonable answers. • Develop spatial concepts.

	- Explore different methods of solving addition equations. - Introduce the Counting on strategy to find the total. - Use the Counting-on strategy to find the total in addition equations. (Discover the value of nickels and pennies. - Count on from a nickel to find the total number of cents. - Solve problems with a nickel and some pennies. - Count on from the greater number to add. - Apply the Counting On strategy to a real-world scenario. - Solve addition equations by counting on. - Apply the Counting On strategy to a real-world scenario. - Solve addition equations by counting on. - Develop spatial concepts. - Solve subtraction problems with pictorial and symbolic representations. - Recognize the meaning of minus and the minus sign (-) - Represent and solve subtraction problems with circle drawings. - Write subtraction equations from drawings and from stories. - Solve subtraction problems using drawings and equations. - Write and solve subtraction equations. - Write and solve subtraction problems. - Use vertical format for addition and subtraction problems. - Solve addition and subtraction problems.
Standards	- **1.OA.A1:** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.[1] - 1.**OA.A.3:** Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* - **1.OA.A.5:** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). - **1.OA.A.6:** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 − 4 = 13 − 3 − 1 = 10 − 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 − 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). - **1.OA.A.7:** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 −

	1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2. • **1.NBT.B.2.A:** 10 can be thought of as a bundle of ten ones — called a "ten." • **1.NBT.B.2.B:** The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. • **1.NBT.B.2.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). • **1.NBT.C.4:** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. • **1.NBT.C.5:** Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. • **1.MD.A.2:** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.* • **1.MD.A.4:** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. • **Mathematical Practices**
Materials and Resources	• First Grade Math Expressions, Math Journals, manipulatives, Math themed literature, IXL Mathematics