Grade: 4 Subject: Mathematics	Unit 3: Place Value and Multi-Digit Addition and Subtraction
Big Idea/Rationale:	• This unit develops the concept of grouping and ungrouping numbers as a key step in performing multi-digit addition and subtraction. Students will learn the relationship between the two operations.
Enduring Understanding (Mastery Objective):	Students will understand that: • A quantity can be represented numerically in various ways. Problem solving depends upon choosing wise ways. • Multiple representations of numbers deepens the understanding of place value. • Our Numerical system is organized around a base of ten. The system is arranged in groups of three place values called periods. It allows for the creation of an infinite number of numbers using the digits 0-9. Place value charts arrange numbers in a way that allows one to better understand the value of each digit.
Essential Questions (Instructional Objective):	• How do mathematical ideas interconnect and build on one another to produce a coherent whole? • How do operations affect numbers? • What makes a computation strategy both effective and efficient? • How can you estimate sums? • How do you estimate differences? • How can you subtract from a three-digit number with zeros? • How can a picture help you write a number sentence?
Content (Subject Matter & Learning Objectives):	• Read and write related addition and subtraction equations. • Demonstrate an understanding of the Commutative Property of Addition. • Solve equations with an unknown by thinking of the relationship among the addend, addend, and total. • Write and solve addition and subtraction problems. • Write and solve equations for collection problems. • Use a letter to represent the unknown. • Write and solve addition and subtraction comparison problems. • Use a letter to represent the unknown. • Solve two-step problems using a variety of approaches including equations, drawings, and mental math. • Solve a variety of problems involving addition, subtraction, multiplication, and division • Identify the place value of numbers through thousands. • Read, and write numbers to thousands. • Round numbers to the nearest ten, hundred or thousand. • Understand greater than and less than comparisons, and use the > and < signs.

	- Identify place value for numbers up to millions. - Understand the magnitude of one million. - Understand when new groups are needed in addition and why. - Analyze different ways of keeping track of new groups. - Understand different addition methods. - Add using mental math. - Use rounding and estimation to check addition. - Understand how to make new groups for subtraction. - Subtract from hundreds. - Understand subtraction as the inverse of addition. - Understand how grouping and ungrouping are related. - Understand general methods for subtraction. - Subtract with numbers with up to four digits. Understand how methods for ungrouping apply to subtraction for any size numbers. - Solve money problems involving estimation and mental math. - Solve multistep estimation problems, using data in a table. - Write and solve addition and subtraction word problems with numbers to the millions. - Solve addition and subtraction word problems with larger numbers. Solve a variety of problems, using mathematical processes and skills. - Use the mathematical process of problem solving, connections, reasoning and proof, communication, and representation. - Solve a variety of problems using mathematical concepts and skills.
Standards	**4.OA.A.1:** Interpret a multiplication equation as a comparison. **4.OA.A.2:** Multiply or divide to solve word problems involving multiplication comparison. **4.OA.A.3:** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **4. NBT.A.1:** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. **4.NBT.A.2:** Read and write multi-digit whole numbers using base ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. **4 NBT.A.3:** Use place value understandings to round multi-digit whole numbers to any place. **4NBT.B.4:** Fluently add and subtract multi-digit whole numbers using the standard algorithm. **Mathematical Practices**

Materials and Resources	• Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics