Grade: 5 **Subject:** Mathematics	**Unit 3: Addition and Subtraction of Whole Numbers and Decimals**
Big Idea/Rationale	• This unit develops the concept of place value for whole numbers and decimals. Students gain a deeper understanding of addition and subtraction of whole numbers and decimals and the relationship involved in these operations. Students read, interpret and pose problems for pictographs, bar graphs, and line graphs. They discuss and solve change, collection, and comparison problems and continue to use algebraic notations in situation and solution equations.
Enduring Understanding (Mastery Objective)	Students will understand that: • 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. • Numbers can be used to tell how many. • Place value can be used to compare and order whole numbers and decimals. • Some problems can be solved by identifying elements that repeat in a predictable way. • There is more than one way to do a mental calculation. Each estimation technique gives one way to estimate by replacing numbers with other numbers that are close and easy to computer mentally. • Adding or subtracting multi-digit decimals is similar to adding or subtracting multi-digit whole numbers. • Information in a problem can often be shown using a diagram and can be solved by writing equations. • Each type of graph is most appropriate for certain kinds of data. • Some problems can be solved by making, reading and analyzing a graph. • Real-world situations are translated into algebraic expressions and equations by looking at quantities and making sense of how these quantities are related.
Essential Questions (Instructional Objective)	• How can we compare and contrast numbers? • What purpose does a decimal have? • Is there a relationship between whole numbers and decimals? • How do you round and estimate numbers? • Why use estimation? • How can we decide when to use an exact answer and when to use an estimate? • How can you display date collected in a survey? • How can you make and interpret bar graphs, line graphs and pictographs? • How can you translate words into expressions?
Content (Subject Matter)	• Understand decimals as equal divisions of a whole. • Relate fractions and decimals.

	• Model and identify equivalent decimals. • Read, write and model whole and decimal numbers. • Compare and order decimal numbers. • Find decimal sums and differences. • Estimate and measure lengths using metric units. • Recognize place values from billions to billionths. • Read, write, compare and order very large numbers. • Represent numbers in different ways. • Make the greatest and the least possible numbers using a given set of numbers. • Recognize relationships among place values to billions. • Align numbers to prepare for addition. • Explain different methods for addition. • Align numbers according to their place values to prepare for adding. • Use and explain different methods for addition. • Explore the relationship between addition and subtraction. • Explain solution methods for multi-digit subtraction. • Solve problems with large numbers and decimal numbers. • Write word problems. • Use the Commutative, Associative, and Distributive properties to compute mentally. • Apply properties to real-world situations. • Understand progressively larger increments to one million. • Read and construct pictographs with large numbers. • Read scales that show large rounded numbers to 100 million. • Identify the halfway point between two numbers that are multiples of ten. • Estimate by rounding large numbers. • Read and construct bar graphs with large numbers. • Round numbers to the hundred millions. • Identify the halfway point with numbers to the hundred millions. • Use a number line and place value to round decimals. • Estimate decimal sums and differences. • Compare and contrast discrete or continuous data represented in tables and graphs. • Interpret double and triple line graphs. • Make single line graphs. • Round decimal numbers to the nearest tenth, hundredth, and thousandth. • Read and construct graphs with decimal scales and decimal numbers. • Understand and apply a classification system for common addition and subtraction situations. • Solve word problems with both additive and multiplicative comparisons. • Solve word problems with unknown addends. • Write a situation equations and convert it to a solution equation.

	• Solve addition and subtraction problems mentally using place value concepts. • Represent and solve comparison word problems. • Understand and apply comparison language. • Write and solve word problems that involve two steps. • Identify relevant information in problems. • Solve a variety of problems using mathematical concepts and skills.
Skills/ Benchmarks (CCSS Standards)	• **5.OA.A.1:** Use parentheses, brackets or braces in numerical expressions and evaluate expressions with these symbols. • **5.NBT.A.1:** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the pace to its right and 1/10 what it represents in the pace to the left. • **5.NBT.A.3:** Read, write and compare decimals to thousandths. • **5.NBT.A.3.A:** Read and write decimals to thousandths using base ten numerals, number names and expanded form (e.g. 347.392 = 3 x100 + 4x10 + 7x1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000). • **5.NBT.A.3.B:** Compare two decimals to thousandths based on meaning of the digits in each place using >, =, < symbols to record the results of comparisons. • **5.NBT.A.4:** Use place value understanding to round decimals to any place. • **5.NBT.B.7:** Add, subtract, multiply and divide decimals to hundredths, 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. • **Mathematical Practices**
Materials and Resources	• Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics