Unit 1
Place Value, Rounding, and Algorithms for Addition and Subtraction

Grade 4
Math

Description:

In unit 1, students use place value charts and number lines to extend their work with whole numbers to 1,000,000. Using a place value chart, they build their knowledge of the pattern, times ten. Students read and write multi-digit whole numbers in different forms. They round and compare whole numbers using appropriate symbols. The standard algorithm for addition and subtraction should be mastered. Extending students previous understanding of perimeter of rectangles is one way students apply the addition and subtraction algorithm. Students also apply addition and subtraction as they solve multi-step word problems by representing the problems using equations with a variable, and verify solutions using various estimation strategies and mental computation.

Louisiana Student Standards for Mathematics (LSSM)

	Number and Operations in Base Ten
	Generalize place value understanding for multi-digit whole numbers.
4.NBT.1	Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. *For example, (1) recognize that 700 ÷ 70 = 10; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20, recognizing that 200 is ten times as large as 20, by applying concepts of place value and division.*
4.NBT.2	Read and write multi-digit whole numbers less than or equal to 1,000,000 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.3	Use place value understanding to round multi-digit whole numbers, less than or equal to 1,000,000, to any place.
	Use place value understanding and properties of operations to perform multi-digit arithmetic.
4.NBT.4	Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm.
	Operations and Algebraic Thinking

	Use the four operations with whole numbers to solve problems.
4.OA.1	Interpret a multiplication equation as a comparison and represent verbal statements of multiplicative comparisons as multiplication equations, *e.g., interpret 35 = 5 × 7 as a statement that is 35 is 5 times as many as 7, and 7 times as many as 5.*
4.OA.3	Solve multi-step 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. *Example: Twenty-five people are going to the movies. Four people fit in each car. How many cars are needed to get all 25 people to the theater at the same time?*

Enduring Understandings:

- Our place value system is based on groups of ten.
- Estimation can help me determine whether or not my answer is reasonable.
- Knowing the value of digits helps me compare and round numbers.
- Composing and decomposing numbers helps me add and subtract using the standard algorithm.
- Addition and subtraction are inverse operations.
- Solving word problems requires perseverance.
- Math thinkers use their understanding, knowledge and skills to solve problems.

Essential Questions:

- What determines the value of a digit?
- How do we use place value to compare large numbers?
- What are the different forms we use to write numbers?
- How can I use what I know about addition and subtraction to solve a real world problem?
- How do I compose and decompose numbers when using a standard algorithm?