Unit 1
Place Value and Decimal Fractions

Grade 5
Math

Description:

Students recognize patterns in the base ten system as they work with multi-digit whole numbers and decimals to the thousandths place. They understand that in multi-digit numbers, a digit in one place represents 10 times what it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left. They use whole number exponents to represent powers of 10.

Students will read, write, and compare decimals to thousandths. Students compare two decimals to the thousandths place using >, =, and <. They use place value understanding to round decimals to any place and apply this understanding to solve problems with metric conversions.

Louisiana Student Standards for Mathematics (LSSM)

Number and Operation in Base Ten	
Understand the place value system.	
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 place to its right and 1/10 of what it represents in the place to its left.
5.NBT.A.2	Explain and apply patterns in the number of zeros of the product when multiplying a number by powers of 10. Explain and apply patterns in the values of the digits in the product or quotient, when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. *For example, $10^0 = 1$, $10^1 = 10$ … and $2.1 \times 10^2 = 210$.*
5.NBT.A.3	Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000). b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
5.NBT.A.4	Use place value understanding to round decimals to any place.
Perform operations with multi-digit whole numbers and with decimals to hundredths.	
5.NBT.B7	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; justify the reasoning used with a written explanation.
Measurement and Data	
Convert like measurement units within a given measurement system.	
5.MD.A.1	Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step, real world problems. (e.g., convert 5 cm to 0.05 m; 9 ft. to 108 in). (Note: Unit 1 addresses the metric system component of this standard.)

Enduring Understandings:

- It is important to understand that a digit represents 10 times the value of what it represents in the place to its right, and 1/10 of what it represents in the place to its left.
- Understanding place value can help me solve problems with metric conversion.
- Understanding place value helps me read, write, compare and round decimals and perform mathematical operations.

Essential Questions:

- What is the relationship between the base ten number system and place value?
- How does the value of a digit change depending on where it is located in a number?
- How can I use place value to solve problems involving metric conversion?
- How can I use exponents or unit fractions to represent numbers in expanded form?