Grade 6 Topic 03 - Operations and Decimals

Content Area: **Mathematics**
Course(s):
Time Period: **Week1**
Length: **1 Week**
Status: **Published**

Stage 1: Desired Results

Unit Overview/ Rationale

Standards & Indicators

MA.6.6.EE.B.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
MA.6.6.NS.B.2	Fluently divide multi-digit numbers using the standard algorithm.
MA.6.6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers.
MA.6.6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Big Ideas - Students will understand that...

Estimation – Numbers can be approximated by numbers that are close. Numerical calculations can be approximated by replacing numbers with other numbers that are close and easy to compute with mentally. Some measurements can be approximated using known referents as the unit in the measurement process.

Basic facts and Algorithms – There is more than one algorithm for each of the operations with rational numbers. Some strategies for basic facts and most algorithms for operations with rational numbers, both mental math and paper/pencil, use equivalence to transform calculations into simpler ones.

Solving Equations and Inequalities – Rules of arithmetic and algebra can b used together with notions of equivalence to transform equations and inequalities so solutions can be found.

Equivalence – Any number, measure, numerical expression, algebraic expression, or equation can be represented in an infinite number of ways that have the same value.

Practices, Processes and Proficiencies – Mathematics content and practices can be applied to solve problems.

Essential Questions - What provocative questions will foster inquiry and transfer of learning

How are sums, differences, products, and quotients involving decimals estimated and found?

Content - Students will know...

Evaluate expressions at specific values of their variables.

Evaluate expressions using Order of Operations.

Determine the values from a specified set that make an equation true.

Determine the values from a specified set that make an inequality true.

Fluently divide multi-digit numbers using the standard algorithm.

Fluently add multi-digit decimals using the standard algortihm.

Fluently subtract multi-digit decimals using the standard algorithm.

Fluently multiply multi-digit deciamls using the standard algorithm.

Fludently divide decimals using the standard algorithm.

Skills - Students will be able to...

Estimate the sums or differences of addition and subtraction expressions that involve decimals.

Find sums and differences of decimals with a variety of whole-number and decimal places.

Estimate products and quotients of whole numbers and decimals in a variety of ways.

Find products of whole numbers and decimals to ten thousandths.

Divide whole numbers by 1-digit divisors.

Find quotients where the dividend and/or quotient is a decimal.

Find quotients of two decimals.

Use the order of operations to evaluate expressions with whole numbers and decimals.

Substitue numeric values for variables to evaluate expresions and to find solutions to equations and inequalities.

Solve multiple-step word problems.

Stage 2: Assessment Evidence

Assessment

Stage 3: Learning Plan

Learning Activities

Use rounding to estimate the sums and differences of decimals.

Add whole numbers and decimals using decimal models.

Use rounding to estimate products and quotients of decimals.

Model multiplying a whole number by a decimal using hundredths grids.

Use estimation and compatible numbers to place the first digit of a quotient and then complete the division.

Model dividing a decimal by a whole number.

Model dividing a decimal by another decimal.

Use the order of operations to evaluate expressions with decimals.

Substitute values for a variable in an inequality to see if the value is a solution to the inequality.

Determine which question to answer first in a multiple-step problem.

Resources

Decimal grids (Teaching Tool 44)

Color pencils

Grocery store fliers, 1 per group

Number cubes (2 labeled 1-6, 2 labeled 4-9) (per group)

Decimal Models (Teaching Tool 28)

Scissors