Number and Operations in Base Ten: Grade 5

Stage 1 Desired Results

ESTABLISHED GOALS:

Competencies:

- ***Students will demonstrate the ability to solve arithmetic and algebraic problems by utilizing effective strategies and applying properties of operations to rational numbers.***

Content Standards:

- 5.NBT.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.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
- 5.NBT.4 Use place value understanding to round decimals to any place.
- 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 5.NBT.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.
- MP1 Make sense of problems and persevere in solving them.
- MP3 Construct viable arguments and critique the reasoning of others.
- MP6 Attend to precision.
- MP8 Look for and express regularity in repeated reasoning.

Transfer

*Students will be able to independently use their learning to **solve arithmetic and algebraic problems, with fluency.***

Meaning

ENDURING UNDERSTANDINGS

Students will understand that…

- place value leads to number sense and efficient computing with numbers.
- fractions and decimals allow for quantities to be expressed with greater precision than with just whole numbers.
- attending to precise detail increases reliability of mathematical results and minimizes miscommunication of mathematical explanations.

ESSENTIAL QUESTIONS

- ***How do position and order affect value?***
- ***What's the best way to solve a problem?***

Acquisition

Students will know…

- that in a multi-digit number, a digit in the one's 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.
- the patterns in the number of zeros of a product when multiplying numbers by powers of 10.
- the patterns in the placement of the decimal point when multiplying or dividing decimals by powers of 10.
- the standard algorithm for multiplication of multidigit whole numbers.

vocabulary:

powers of 10, exponent, decimal, decimal place, standard algorithm

Students will be skilled at…

- multiplying multi-digit whole numbers with fluency.
- representing powers of 10 using whole-number exponents.
- dividing a whole number of up to four digits by a 2-digit whole number using strategies based on pace value and the relationship between multiplication and division.
- Reading, writing, and comparing two decimals through the thousandths
- rounding a decimal number to any place.
- Finding whole number quotients with up to four-digit dividends and two-digit divisors using strategies involving place value, properties of operations, and the relationship between multiplication and division.
- adding and subtracting decimals through the hundredths using concrete models and pictures.
- adding and subtracting decimals through the hundredths using strategies based on place value,

		the properties of operations, and the relationship between addition and subtraction. • multiplying and dividing decimals through the hundredths using concrete models and pictures. • multiplying and dividing decimals through the hundredths using strategies based on place value, the properties of operations, and the relationship between multiplication and division.
Content Area Literacy Standards		***21st Century Skills***
not applicable		• *reason effectively* • *make judgments and decisions* • *solve problems*

Stage 2 - Evidence

Evaluative Criteria	***Assessment Evidence***
	PERFORMANCE TASK(S):
	OTHER EVIDENCE: STAR math assessment

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

Language Arts Integration	***Mathematics Integration***
• 1.OA.1 Use	• 1.OA.1 Use
Technology Integration	***District Materials***
• 1.OA.1 Use	
