2012-2013 Quarter 1 - 5th Grade Math Rubric

Mathematics

Rubric Key: ☐ **- Standards introduced and assessed** ▭ **- Standards maintained and assessed as needed**

Operations and Algebraic Thinking

Write and interpret numerical expressions.

Standard	4	3	2	1	Notes
MCC5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Uses and evaluates problems with parentheses, brackets, and braces with no procedural or computational errors.	Consistently uses and evaluates problems with parentheses, brackets, and braces with few procedural or computational errors.	Shows progress, but inconsistently uses and evaluates problems with including parentheses, brackets, and braces.	Shows minimal progress or does not use and evaluate problems including parentheses, brackets, and braces.	For example, evaluate the numerical expression: 2 x [(9x4) - (17 -6)] = 50
MCC5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	Communicates mathematical ideas precisely by writing simple expressions that record calculations with numbers, and interpret numerical expressions.	Consistently communicates mathematical ideas precisely by writing simple expressions that record calculations with numbers, and interpret numerical expressions with few computational or procedural errors.	Shows progress, but inconsistently communicates mathematical ideas precisely by writing simple expressions that record calculations with numbers, and interpret numerical expressions.	Shows minimal progress or does not communicate mathematical ideas precisely by writing simple expressions that record calculations with numbers, and interpret numerical expressions.	For example, express the calculation “add 8 and 7, then multiply by 2” as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

Number & Operations in Base Ten

Understand the place value system.

Standard	4	3	2	1	Notes
MCC5.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.	Analyzes the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01 with no procedural or computational errors.	Consistently analyzes the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01 with few computational or procedural errors.	Shows progress, but inconsistently analyzes the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01	Shows minimal progress or does not analyze the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01	

Number & Operations in Base Ten					
Understand the place value system.					
Standard	**4**	**3**	**2**	**1**	**Notes**
MCC5.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.	Explain the patterns in the number of zeros and placement of decimals in multiplication or division problems when multiplying or dividing by a power of 10 (10, 100, 1,000, 0.1, 0.01, 0.001) with no procedural or computational errors.	Consistently explains the patterns in the number of zeros and placement of decimals in multiplication or division problems when multiplying or dividing by a power of 10 (10, 100, 1,000, 0.1, 0.01, 0.001) with few procedural or computational errors.	Shows progress, but inconsistently explains the patterns in the number of zeros and placement of decimals in multiplication or division problems when multiplying or dividing by a power of 10 (10, 100, 1,000, 0.1, 0.01, 0.001).	Shows minimal progress or does not explain the patterns in the number of zeros and placement of decimals in multiplication or division problems when multiplying or dividing by a power of 10 (10, 100, 1,000, 0.1, 0.01, 0.001).	Make sure to use concepts of exponential notation. Be sure to use whole-number exponents to denote powers of 10.
MCC5.NBT.3 Read, write, and compare decimals to thousandths. **a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.**	Read and write decimals to thousandths place value using base-ten numerals, number names, and expanded form with no procedural errors.	Consistently reads and writes decimals to thousandths place value using base-ten numerals, number names, and expanded form with few procedural errors.	Shows progress, but inconsistently reads and writes decimals to thousandths place value using base-ten numerals, number names, and expanded form.	Shows minimal progress or does not read and write decimals to thousandths place value using base-ten numerals, number names, and expanded form.	Standard has been separated due to complexity and length. **MCC5.NBT.3a** $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
MCC5.NBT.3 Read, write, and compare decimals to thousandths. **b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.**	Compares two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons with no procedural errors.	Consistently compares two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons with few procedural errors.	Shows progress, but inconsistently compares two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Shows minimal progress or does not compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	

Number & Operations in Base Ten					
Understand the place value system.					
Standard	**4**	**3**	**2**	**1**	**Notes**
MCC5.NBT.4 Use place value understanding to round decimals to any place.	Uses place value understanding to round decimals to any place with no procedural errors.	Consistently uses place value understanding to round decimals to any place with few procedural errors.	Shows progress, but inconsistently uses place value understanding to round decimals to any place.	Shows minimal progress or does not use place value understanding to round decimals to any place.	
Perform operations with multi-digit whole numbers and with decimals to hundredths.					
MCC5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Solves multi-digit multiplication problems with no procedural or computational errors.	Consistently solves multi-digit multiplication problems with few procedural or computational errors.	Shows progress, but inconsistently solves multi-digit multiplication problems.	Shows minimal progress or does not use strategies to solve multi-digit multiplication problems.	Fluency has been interpreted to mean that a student solves multi-digit multiplication problems effortlessly and correctly most of the time.
MCC5.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.	Finds whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors with no procedural or computational errors. *See note.	Consistently finds whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors with few procedural or computational errors. *See note.	Shows progress, but inconsistently finds whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors. *See note.	Shows minimal progress or does not find whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors. *See note.	Explore the meaning of divisibility as a situation with no remainder, analyze divisibility, and informally explain divisibility relationships. *Ensure use of 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.

Number & Operations in Base Ten					
Perform operations with multi-digit whole numbers and with decimals to hundredths.					
Standard	**4**	**3**	**2**	**1**	**Notes**
MCC5.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.	Adds, subtracts, multiplies and divides decimals with no procedural or computational errors.	Consistently adds, subtracts, multiplies and divides decimals with few procedural or computational errors.	Shows progress, but inconsistently adds, subtracts, multiplies and divides decimals.	Shows minimal progress or does not add, subtract, multiply and divide decimals.	Ensure use of 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.