NJDOE MODEL CURRICULUM

CONTENT AREA: Mathematics	GRADE: 5	UNIT: # 1	UNIT NAME: Understanding the Place Value System

	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS	
1	Evaluate numerical expressions with parentheses, brackets or braces.	5.OA.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
2	Write numerical expressions when given a word problem or a scenario in words and use words to interpret numerical expressions.	5.OA.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. ***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.*
3	Explain the "ten times" or 1/10 relationships for place values in multi-digit numbers moving right or left across the places.	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.
4	Recognize and explain patterns of the number of zeros and the placement of the decimal point in a product or quotient when a number is multiplied or divided by powers of 10.	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	Compare decimals to thousandths based on the value of the digits in each place using the symbols >, =, < when presented as base ten numerals, number names, or expanded form.	5.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, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (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.
6	Round a decimal to any place.	5.NBT.4	Use place value understanding to round decimals to any place.
7	Use the standard algorithm to multiply 3-digit whole numbers by 1-digit whole numbers.	5.NBT.5	Fluently multiply multi-digit whole numbers using the standard algorithm.
8	Calculate whole number quotients with 4-digit dividends and 2-digit divisors and explain answers with equations, rectangular arrays, and area models.	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.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks). ***Bold type indicates grade level fluency requirements.*** *(Identified by PARCC Model Content Frameworks).*

Selected Opportunities for Connection to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
   SLO #2 Explain the correspondences between expressions represented in word problems or scenarios and numerical expressions.
2. **Reason abstractly and quantitatively.**
   SLO #1 Know and flexibly apply the properties of operations to evaluate numerical expressions with parentheses, brackets and braces.
   SLO #2 Understand and make sense of quantities and their relationships to one another in numerical expressions and numerical expressions represented in word problems.
   SLO #3 Understand and make sense of the relationships of place values and the quantities they represent.
   SLO #4 Understand and make sense of the quantities of zeros and the placement of the decimal point in a product or quotient when a number is multiplied or divided by a power of 10.
   SLO #5 Understand and make sense of the relationship of decimals to the thousandths and the quantities they represent.
   SLO #6 Understand and make sense of the quantity when rounding decimals to any place.
   SLO #8 Use quantitative reasoning that entails creating a coherent representation of division problems using 4-digit dividends and 2-digit divisors in equations.
3. **Construct viable arguments and critique the reasoning of others.**
   SLO #3 Justify and explain conclusions made about place value relationships in multi-digit numbers.
   SLO #4 Make conjectures and build logical statements involving the patterns of the number of zeros and the placement of the decimal point when a number is multiplied or divided by a power of 10.
   SLO #8 Explain and justify conclusions (in the form of equations, arrays, and models) made about dividing 4-digit dividends and 2-digit divisors.
4. **Model with mathematics.**
   SLO #2 Apply previously learned concepts about numerical expressions and word problems in order to solve problems that involve both.
5. Use appropriate tools strategically.
6. **Attend to precision.**
   SLO #3 Communicate precisely the place value relationships in multi-digit numbers.
   SLO #5 State the meaning of the <, >, or = symbols when comparing decimals to the thousandths place.
   SLO #8 Calculate whole number quotients accurately and efficiently.
7. **Look for and make use of structure.**
   SLO #1 Look for and discern a pattern or structure when evaluating numerical expressions with parentheses, brackets, and braces.
   SLO #3 Look for and discern a pattern involving place value (“ten times” or “1/10” relationship).
   SLO #4 Look for and discern a pattern involving the number of zeros and the placement of the decimal point when a number is divided or multiplied by a power of 10.
   SLO #7 Look for and discern a pattern when using the standard algorithm to multiply 3-digit whole numbers by 1-digit whole numbers.
   SLO #8 Look for and discern a pattern when dividing 4-digit dividends and 2-digit divisors.
8. Look for and express regularity in repeated reasoning.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Greater Brunswick Charter School Curriculum

Grade level: 5			Subject: Math		Unit #: 1		
Day	**Topic**	**SLO**	**Learning Objectives**	**Essential Questions**	**Suggested Student Activities**		**Possible Resources**
					Whole Group	**Small Group / Stations**	
1	Place value	3	To identify place value and compare numbers	*What do I remember about place values and comparing numbers?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p. 17-22
2		3	To describe the relationship between specific fractions of a power of 10 and decimals	*Why can I read a decimal just like I read a fraction?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p. 23-28
3		3	To read and write decimals in number names, and expanded form			Lesson Guided Practice Independent Practice i-Ready	• MyMath p.29-36 • Toon U: Compare Fractions/Decimals •
4		3	To identify place values to the right of the decimal point	*How can one digit have a different value than the same digit right next to it?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p. 37-42
5	Decimals in expanded forms	3, 5	To write decimals as factors of fractions in powers of 10 and in words	*How is a decimal just an easier way to write a fraction?* *What is the easiest way to read a decimal?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.43-48

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6	Comparing decimals	5	To compare decimals	What do I need to see to find out which decimal is bigger?			MyMath p.49-54
7	Comparing numbers	5	To compare numbers with digits on both sides of the decimal point			Lesson Guided Practice Independent Practice i-Ready	MyMath p.55-60
8						Review Independent Practice i-Ready	MyMath p.59-60 Khan Academy AAA Math IXL
9	Rounding decimals	6	To round decimal numerals	*How are rounding numbers and rounding decimals the same?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.303-308
10	Apply rounding of decimals	6	To round decimals	*How does rounding help tell me if my answer makes sense?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.309-314
11						Lesson Guided Practice Independent Practice i-Ready	MyMath p.315-322
12	Problem solving		Review 4 steps for solving problems	*How does making a movie in my mind help me solve a real problem?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.61-66
13	Place value with, comparing, and rounding decimals	3, 5, 6				Review Assessment	

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14	The meaning of exponents	4	Rewrite repeated multiplication sentences into a number using exponents	*How can I write 3X3X3X3X3X3X3 using only two numbers?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.93-98 Math Goodies Math is Fun
15	Multiplying and Dividing by Powers of 10	4	To multiply a number by a power of 10 by counting decimal places and using mental math	*How can I multiply by a million in my head?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p. 99-104
16	Using models and arrays to multiply using partial products	7	To multiply each digit in a number separately to arrive at the product	*How does breaking a number apart make it easier to multiply it in my head?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.119-124 Partial Products via Arrays
17	Rounding to estimate	6, 7	To round factors to estimate products	*How can rounding help me get the answer faster? How is rounding and estimating different?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.125-130
18	Multiply 3-digit by 1-digit numbers	7	To multiply AAA X B	*How can I use my skills with partial products to multiply in my head?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.131-136
19	Rounding, estimating, multiplication	4, 6, 7				Review Assessment	

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20	The relationship between multiplication and division	8	To see that multiplication and division are opposites like addition and subtraction	*How do I know that division is the 'undo' for multiplication?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.157-162
21	Simple division	8	Recall how to divide from earlier grades	*Do I remember anything about division?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p169-174 MyMath p.163-168 for remediation only
22	Dividing using powers of 10	8	Divide using divisors that are powers of 10			Lesson Guided Practice Independent Practice i-Ready	MyMath p.175-180
23	Dividing by rounding	8	Estimate quotients by rounding first	*How does rounding a number help me do math in my head?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.183-188
24	Visualizing division	8	Use models and arrays to visualize the concept of dividing a number into parts	*What does division look like in real life?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.189-194
25	Divide using the reverse thinking from partial products	8		*How can I make division easier to do in my head?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.195-200

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26	Simple division	8	Divide 4 digits by 1 digit, correctly placing the first digit in the quotient	*Why is it important to put the first number in my answer in the right place?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.209-214
27	Quotients with zeros	8	Ensure proper alignment when zeros appear in the quotient	*How do I know when a zero goes in the quotient?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.215-220
28	Quotient remainders	8	Interpret the value of the remainder	*What does that remainder really mean for my answer?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.221-232
29	Division	8				Review Assessment	
30	Properties of Multiplication	1	Use the commutative, associative, identify properties of multiplication	*Does it matter how I group numbers or in what order they are to multiply them correctly?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p 423-428
31	Number sentences	2	Write number sentences from problems			Lesson Guided Practice Independent Practice i-Ready	MyMath p481-486
32	Order of Operations	1	Compute the value of a numerical expression	*What do I do first, next, last when finding the value of an expression?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.487-492

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Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources
					Whole Group	Small Group / Stations	
33	Numerical expressions	2	Write numerical expressions from problems	*How can I make a problem into a math expression so I can solve it?*		Lesson Guided Practice Independent Practice i-Ready	MyMath p.493-498
34		1-8				Unit Assessment	

Word Wall Candidates

Place value	Decimal	Decimal point	Standard form	Expanded form
Equivalent	Compatible	Exponent	Base	Power
Squared	Cubed	Powers of 10	Distributive Property	Partial Products
Partial Quotients	Fact Family	Dividend	Divisor	Quotient
Factor	Product	Remainder	Associative Property	Commutative Property
Identify Property	Order of Operations			

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Authentic Application

Your Goal: To ensure all of the donuts are placed in boxes for sale to customers.

Your Role: Find out how many donuts are needs and how many boxes are needed to package the donuts

Your Audience: Donuts will be sold to classes and the entire school

The Situation: Your team is operating a bakery that makes delicious donuts that everyone loves and wants to buy. But you only sell them by the box. Your bakery makes only four kinds of donuts:

- Chocolate – packaged 6 to a box – each box costs $4.85
- Glazed – packaged 12 to a box – each box costs $7.35
- Mini Jelly-filled – packaged 18 to a box – each box costs $6.25
- Super Cream-filled – packaged 3 to a box – each box costs $4.50

Your team must find out how many of each kind of donut is wanted by:

- Your team
- A class at a grade level – each team must select a different grade level
- That entire grade level
- Your school

You do that by surveying a class in the grade level your team selected, then multiplying the results of that survey to find the totals for the grade level and the school. Then, you must order the correct number of boxes to use to package the donuts.

The Product: You provide:

- The number of donuts of each type wanted by the class you surveyed, the grade level of that class, and the school, based on the donuts wanted by the class you surveyed.
- The number of boxes needed to package all of your donuts
- The cost of all of each kind of donut
- The cost of all the donuts together.

Success criteria: All of your surveys and counts must be accurate. The number of boxes you need must be correct. All of your costs must be accurate.