NJDOE MODEL CURRICULUM			
CONTENT AREA: Mathematics	**GRADE: 5**	**UNIT: # 3**	**UNIT NAME: Operations with Multi-digit Whole Numbers, Decimals and Fractions**

#	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS
1	Describe the place value of numeral digits relative to both the place to the right and the place to the left (decimal to hundredths and whole numbers to billions).	5.NBT.1
2	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; and, explain the reasoning used.	5.NBT.7
3	Convert standard measurement units within the same system (e.g., centimeters to meters) to solve multi-step problems).	5.MD.1
4	Add and subtract fractions (including mixed numbers) with unlike denominators.	5.NF.1
5	Solve word problems involving adding or subtracting fractions including unlike denominators, and determine if the answer to the word problem is reasonable, using estimations with benchmark fractions.	5.NF.2
6	Interpret a fraction as a division of the numerator by the denominator; solve word problems where division of whole numbers leads to fractional or mixed number answers.	5.NF.3
7	Multiply multi-digit whole numbers using the standard algorithm. (no calculators).	**5.NBT.5**

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).*

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Selected Opportunities for Connection to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
   SLO #2 Use concrete objects or pictures to help conceptualize adding, subtracting, multiplying, or dividing by decimals to the hundredths.
2. **Reason abstractly and quantitatively.**
   SLO #1 Understand and make sense of quantities as they relate to place value of numeral digits.
   SLO #2 Understand and make sense of quantities and their relationships when adding, subtracting, multiplying, or dividing by decimals to the hundredths.
   SLO #3 Understand and make sense of quantities when converting measurements within a system.
   SLO #6 Understand and make sense of fraction quotients, including mixed numbers.
3. **Construct viable arguments and critique the reasoning of others.**
   SLO #1 Understand and use stated assumptions, definitions, and previous results to describe place value of numeral digits.
   SLO #2 Explain and justify the reasoning, based on models, drawings, or strategies, used to add, subtract, multiply, and divide by decimals.
4. Model with mathematics.
5. **Use appropriate tools strategically.**
   SLO #2 Consider and use available tools, such as models and drawings, when solving addition, subtraction, multiplication, or division problems involving decimals.
   SLO #5 Consider and use available tools, such as diagrams and drawings, when solving addition or subtraction word problems involving fractions with unlike denominators.
6. **Attend to precision.**
   SLO #1 Communicate and describe precisely quantities of numbers and how they relate to place value.
7. **Look for and make use of structure.**
   SLO #1 Look for and discern a pattern when changing place value of numeral digits.
   SLO #2 Look for and discern a pattern when adding, subtracting, multiplying, or dividing by decimals.
   SLO #3 Look for and discern a pattern when converting standard measurement units within a system.
   SLO #7 Look for and discern a pattern when using the standard algorithm to multiply multi-digit whole numbers.
8. **Look for and express regularity in repeated reasoning.**
   SLO #5 With problems involving addition and subtraction of fractions; continually evaluate the reasonableness of the answers.

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

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Code #	Common Core State 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.7	Add, subtract, multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, the properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5.MD.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
5.NF.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, **a/b** + **c/d** = (**ad** + **bc**)/**bd**.)*
5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*
5.NF.3	Interpret a fraction as division of the numerator by the denominator (***a/b = a ÷ b***). Solve word problems involving the division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g. by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3 and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50 pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*
5.NBT.5	Fluently multiply multi-digit whole numbers using the standard algorithm.

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