GRADE 5 Advanced Math – Unit 1

Mission Statement
The primary goal of the Swedesboro-Woolwich School District is to prepare each student with the real life skills needed to compete in a highly competitive global economy. This will be achieved by providing a comprehensive curriculum, the integration of technology, and the professional services of a competent and dedicated faculty, administration, and support staff. Guiding this mission will be Federal mandates, including No Child Left Behind, the New Jersey Core Curriculum Content Standards, and local initiatives addressing the individual needs of our students as determined by the Board of Education. The diverse resources of the school district, which includes a caring PTO and active adult community, contribute to a quality school system. They serve an integral role in supporting positive learning experiences that motivate, challenge and inspire children to learn.

Unit/Module Overview
Students will develop a conceptual understanding and with accuracy and efficiency solve whole number and decimal operations. Students continue to use efficient strategies to multiply and the importance of place value is stressed. The models and strategies developed for whole numbers will be extended to decimal values. The properties of addition and multiplication will be applied to solve problems. Students will write and interpret expressions using the order of operations. This unit will be completed in 12 weeks (Trimester 1).

Standards Covered in Current Unit/Module		
CCS Priority Standard	**Learning Goals**	**Learning Targets**

MATH.5.NBT.A.1 [*Standard*] - 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.	● **SWBAT** recognize that in a multi-digit number, a digit in the one place represents 10 times as much as it represents in theplace to its right and 1/10 of what it represents in the place to its left.	● I can explain that a digit in the one place is 10 times as much as the place to its right. ● I can explain that a digit in the one place is 1/10 as much as the place to its left.
MA.5.NBT.A.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.	**SWBAT** explain patterns in the number of zeros of the product when multiplying a number by powers of 10, explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10, and use whole number exponents to denote powers of 10.	● I can explain patterns when multiplying a number by 10. ● I can explain patterns in the placement of a decimal point when multiplying or dividing by a power of 10. ● I can use exponents to represent powers of 10.
MA.5.NBT.A.3 Read, write, and compare decimals to the thousandths.	**SWBAT** read, write, and compare decimals to the thousandths.	● I can read decimals to the thousandths. ● I can write decimals to the thousandths. ● I can compare decimals to the thousandths.
MA.5.NBT.A3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, eg., 347.392 =3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).	**SWBAT** read and write decimals to thousandths using base-ten numerals, number names, and expanded form.	● I can read and write decimals to the thousandths using base-ten numerals. ● I can read and write decimals to the thousandths using number names. ● I can read and write decimals to the thousandths using expanded form.
MA.5..NBT.A3b Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols to record the results of comparisons.	**SWBAT** compare two decimals to thousandths based on meaning of the digits in each place using>, =, and < symbols to record the results of comparisons.	● I can compare decimals to the thousandths place using comparison symbols.
MA.5..NBT.A4 Use place value understanding to round decimals to any place.	**SWBAT** use place value understanding to round decimals to any place.	● I can round decimals to any place.
MA.5..NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.	**SWBAT** perform operations with multi-digit whole numbers and with decimals to hundredths.	● I can add and subtract whole numbers. ● I can multiply and divide whole numbers. ● I can add and subtract decimals.

		• I can multiply decimals. • I can divide decimals.
MA.5..NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	• **SWBAT** fluently multiply multi-digit whole numbers using the standard algorithm.	• I can multiply whole numbers using the standard algorithm.
MA.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value and properties of operations.	• **SWBAT** find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value and properties of operations.	• I can divide whole numbers by using place value and properties of operations.
MA.5.NBT.B.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.	• **SWBAT** add, subtract, multiply, and divide decimals to hundredths using concrete models or drawings and strategies based on place value and properties of operations.	• I can add and subtract decimals using drawings/models, place value, and properties of operations. • I can multiply decimals using drawings/models, place value, and properties of operations. • I can divide decimals by using drawings/models, place value, and properties of operations.
MATH.5.OA.A.1 [*Standard*] - Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	• **SWBAT** use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	• I can evaluate numerical expressions that contain parentheses and brackets.
MA.5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	• **SWBAT** write simple expressions that record calculations with numbers, and interpret numerical expression without evaluating them.	• I can write numerical expressions. • I can interpret numerical expressions.
MA.6.EE.A.1 Write and evaluate numerical expressions involving whole number exponents.	• **SWBAT** write and evaluate numerical expressions involving whole number exponents.	• I can write numerical expressions that involve whole number exponents. • I can interpret numerical expressions that involve whole number exponents.

MA.6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers.	**SWBAT** write, read and evaluate expressions in which letters stand for numbers.	• I can write expressions in which letters stand for numbers. • I can read expressions in which letters stand for numbers. • I can evaluate expressions in which letters stand for numbers.
MA.6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.	**SWBAT** fluently divide multi-digit numbers using the standard algorithm.	• I can fluently divide multi-digit numbers using the standard algorithm.
MA.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm.	**SWBAT** fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm.	• I can fluently add multi-digit decimals. • I can fluently subtract multi-digit decimals. • I can fluently multiply multi-digit decimals. • I can fluently divide multi-digit decimals.
MA.6.NS.B.4 I can find the greatest common factor of two or three whole numbers less than or equal to 100 and the least common multiple of two or three numbers less than or equal to 12.	**SWBAT** find the gcf of two or three whole numbers less than or equal to 100 and the lcm of two or three numbers less than or equal to 12.	• I can find the gcf of two or three whole numbers less than or equal to 100. • I can find the lcm of two or three whole numbers less than or equal to 12.

Essential Questions

- How can you describe the relationship between two decimal place-value positions?
- How do you read, write, and represent whole numbers through hundred millions?
- How can you use properties of operations to solve problems?
- How can you use an exponent to sow powers of 10?
- How can you use a basic fact and a pattern to multiply by a two digit number?
- How do you multiply by one digit numbers?
- How do you multiply by two digit numbers?
- How is multiplication used to solve a division problem?
- How can you use the strategy "solve a simpler problem" to help you solve a division problem?
- How can you use a numerical expression to describe a situation?
- In what order must operations be evaluated to find the solution to a problem?
- In what order must operation be evaluated to find a solution when there are parentheses within parentheses?
- How can you tell where to place the first digit of a quotient without dividing?

- How do you solve and check division problems?
- How can you use compatible numbers to estimate quotients?
- How can you divide by two digit divisors?
- When solving a division problem, when do you write the remainder as a fraction?
- How can you adjust the quotient if your estimate is too high or too low?
- How can the strategy draw a diagram help you solve a division problem?
- How can you describe the relationship between two place-value positions?
- How do you read, write, and represent decimals through thousandths?
- How can you use place value to compare and order decimals?
- How can you use place value to round decimals to a given place?
- How can you estimate decimal sums and differences?
- How can place value help you add and subtract decimals?
- How can you use addition or subtraction to describe a pattern or create a sequence with decimals?
- How can the strategy "make a table" help you organize and keep track of your bank account balance?
- How can you use a model to multiply a whole number and a decimal?
- How can you use expanded form and place value to multiply a decimal and a whole number?
- How can the strategy "draw a diagram" help you solve a decimal multiplication problem?
- How can you use a model to multiply decimals?
- What strategies can you use to place a decimal point in a product?
- How do yo know you have the correct number of decimal places in your product?
- How can patterns help you place the decimal point in a product or quotient?
- How can you estimate decimal quotients?
- How can you divide decimals by whole numbers?
- How can you place the decimal point in a quotient?
- When do you write a zero int the dividend to find a quotient?
- How do you use the strategy "work backward" to solve multistep decimal problems?

Weekly Learning Activities and Pacing Guide			
Topic & #	**NJ Standards**	**Critical Knowledge & Skills**	**Possible Resources & Activities**

Days			
Big Ideas Chapter 1 (11 days total)	5.NBT.A.1 5.NBT.A.1 5.NBT.A.2 5.NBT.A.1 5.NBT.A.3a 5.NBT.A.1 5.NBT.A.3a 5.NBT.A.3b 5.NBT A4 MATH.6.EE.A.1 MATH.6.EE.A.2 MATH.6.EE.A.2	**Obj. We are learning to**: ● Understand the relationship between place value positions. ● Write multi-digit numbers in different forms and compare the values of digits. ● Write numbers using exponents. ● Write thousandths as fractions and decimals. ● Write decimals in different forms and compare the values of digits. ● Compare decimals to the thousandths place. ● Use place value to round decimals **Suggested Formative Assessment(s)**: ● Big Ideas Grade 5 and 6 Assessments ● Online Assessments ● Lesson Checks ● Exit Tickets ● Unit Project ● Assessment Guide ● iReady	**Activities:** Chapter 1 Opener: Place Value Concepts Lesson 1.1: Place Value Patterns Lesson 1.2: Place Value with Whole Numbers Lesson 1.3: Patterns and Powers of 10 Lesson 1.4: Decimals to Thousandths Lesson 1.5: Place Value with Decimals Lesson 1.6: Compare Decimals Lesson 1.7 Round decimals Grade 6 Ch 1 lesson 1.1 Grade 6 Ch 1 lesson 1.2 Grade 6 Ch 1 lesson 1.3 **Materials** Big Ideas Materials *Stop watches/timers Place value charts (from millions to thousandths) *Multiplication and division charts *Manipulatives (cubes, money, coins, counters) Index cards *Paper (chart, graph, lined, and blank) Base ten blocks Calculators Colored pencils, markers, crayons *Dry erase boards Google Classroom Math Iready Math Reflex Math SplashLearn Khan Academy Math Aids Place Value: http://www.math-aids.com/Place_Value/ http://www.commoncoresheets.com/Values.php http://www.printable-math-worksheets.com/place-value-chart.html
Big Ideas Chapter 2 (8 days total)	5.OA.A.1 5.OA.A.1 5.OA.A.1 5.OA.A.2 5.OA.A.1	**Obj. We are learning to**: ● Use number properties. ● Use order of operations to evaluate numerical expressions. ● Write numerical expressions.	**Activities:** Chapter 2 Opener: Numerical Expressions Lesson 2.1: Number Properties Lesson 2.2: Order of Operations Lesson 2.3: Write Numerical Expressions

	5.OA.A.2 MATH.6.NS.B.4 MATH.6.NS.B.4	• Use order of operations to evaluate expressions with grouping symbols. **Suggested Formative Assessment(s)**: • Big Ideas Grade 5 and 6 Assessments • Online Assessments • Lesson Checks • Exit Tickets • Unit Project • Assessment Guide • iReady	Lesson 2.4: Evaluate Expressions with Grouping Symbols End of Chapter 2: Place Value Concepts End of Chapter 2: Place Value Concepts End of Chapter 2: Place Value Concepts Grade 6 ch 1 lesson 1.4 Grade 6 ch 1 lesson 1.5 Assessment ch 1 Gr. 6 **Materials** Big Ideas Materials *Stop watches/timers Place value charts (from millions to thousandths) *Multiplication and division charts *Manipulatives (cubes, money, coins, counters) Index cards *Paper (chart, graph, lined, and blank) Base ten blocks Calculators Colored pencils, markers, crayons *Dry erase boards Google Classroom Math Iready Math Reflex Math SplashLearn Khan Academy Math Aids Place Value: http://www.math-aids.com/Place_Value/ http://www.commoncoresheets.com/Values.php http://www.printable-math-worksheets.com/place-value-chart.html
Big Ideas Chapter 3 (10 days total)	5.NBT.A.4 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7	**Obj. We are learning to**: • Use rounding or compatible numbers to estimate sums and differences of decimals. • Use models to add or subtract decimals. • Add decimals and check whether the sum is reasonable. • Subtract decimals and check my answer. • Use addition and subtraction to evaluate	**Activities:** Chapter 3 Opener: Add and Subtract Decimals Lesson 3.1: Estimate Sums and Differences Lesson 3.2: Use Models to Add or Subtract Decimals Lesson 3.3: Add Decimals Lesson 3.4: Subtract Decimals Lesson 3.5: Add and Subtract Decimals Lesson 3.6: Use Mental Math to Add or Subtract Decimals Lesson 3.7: Problem Solving: Money

	MATH.6.NS.B.3	expressions involving decimals. ● Use mental math to add or subtract decimals. ● Solve multi-step word problems involving money. **Suggested Formative Assessment(s)**: ● Big Ideas Grade 5 and 6 Assessments ● Online Assessments ● Lesson Checks ● Exit Tickets ● Unit Project ● Assessment Guide ● iReady	End of Chapter 3: Add and Subtract Decimals End of Chapter 3: Add and Subtract Decimals Review multiplication skills for Chapter 4 Gr. 6 Ch 2 lesson 2.4 **Materials** Big Ideas Materials *Stop watches/timers Place value charts (from millions to thousandths) *Multiplication and division charts *Manipulatives (cubes, money, coins, counters) Index cards *Paper (chart, graph, lined, and blank) Base ten blocks Calculators Colored pencils, markers, crayons *Dry erase boards Google Classroom Math Iready Math Reflex Math SplashLearn Khan Academy Math Aids Place Value: http://www.math-aids.com/Place_Value/ http://www.commoncoresheets.com/Values.php http://www.printable-math-worksheets.com/place-value-chart.html
Big Ideas Chapter 4 (8 days total)	5.NBT.A.2 5.NBT.A.2 5.NBT.B.5 5.NBT.B.5 5.NBT.B.5	**Obj. We are learning to**: ● Find products involving multiples of 10 and powers of 10. ● Use rounding and compatible numbers to estimate products. ● Multiply multi-digit numbers by one-digit numbers. ● Multiply multi-digit numbers by two-digit numbers. ● Multiply multi-digit whole numbers. **Suggested Formative Assessment(s)**: ● Big Ideas Grade 5 and 6 Assessments	**Activities:** Chapter 4 Opener: Multiply Whole Numbers Lesson 4.1: Multiplication Patterns Lesson 4.2: Estimate Products Lesson 4.3: Multiply by One-Digit Numbers Lesson 4.4: Multiply by Two-Digit Numbers Lesson 4.5: Multiply Multi-Digit Whole Numbers End of Chapter 4: Multiply Whole Numbers End of Chapter 4: Multiply Whole Numbers **Materials** Big Ideas Materials *Stop watches/timers

		• Online Assessments • Lesson Checks • Exit Tickets • Unit Project • Assessment Guide • iReady	Place value charts (from millions to thousandths) *Multiplication and division charts *Manipulatives (cubes, money, coins, counters) Index cards *Paper (chart, graph, lined, and blank) Base ten blocks Calculators Colored pencils, markers, crayons *Dry erase boards Google Classroom Math Iready Math Reflex Math SplashLearn Khan Academy Math Aids Place Value: http://www.math-aids.com/Place_Value/ http://www.commoncoresheets.com/Values.php http://www.printable-math-worksheets.com/place-value-chart.html
Big Ideas Chapter 5 (10 days total)	5.NBT.A.2 5.NBT.B.7 5.NBT.A.4 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 5.NBT.B.7 MATH.6.NS.B.3 multiply decimals	**Obj. We are learning to**: • Find products involving decimals and powers of 10. • Use rounding and compatible numbers to estimate products of decimals and whole numbers. • Use models to multiply decimals and whole numbers. • Multiply decimals and whole numbers. • Use models to multiply decimals. • Use partial products to multiply decimals. • Use estimation and properties to multiply decimals. • Multiply decimals. • Solve multi-step word problems involving money. • Multiply decimals. **Suggested Formative Assessment(s)**: • Big Ideas Grade 5 and 6 Assessments • Online Assessments • Lesson Checks	**Activities:** Lesson 5.1: Multiplication Patterns with Decimals Lesson 5.2: Estimate Products of Decimals and Whole Numbers Lesson 5.3: Use Models to Multiply Decimals and Whole Numbers Lesson 5.4: Multiply Decimals and Whole Numbers Lesson 5.5: Use Models to Multiply Decimals Lesson 5.6: Use Partial Products to Multiply Decimals Lesson 5.7: Use Strategies to Multiply Decimals Lesson 5.8: Multiply Decimals Lesson 5.9: Problem Solving: Multiply with Money End of Chapter 5: Multiply Decimals Gr 6 ch 2 lesson 2.5 **Materials** Big Ideas Materials *Stop watches/timers Place value charts (from millions to thousandths) *Multiplication and division charts *Manipulatives (cubes, money, coins, counters) Index cards *Paper (chart, graph, lined, and blank)

		• Exit Tickets • Unit Project • Assessment Guide • iReady	Base ten blocks Calculators Colored pencils, markers, crayons *Dry erase boards Google Classroom Math Iready Math Reflex Math SplashLearn Khan Academy Math Aids Place Value: http://www.math-aids.com/Place_Value/ http://www.commoncoresheets.com/Values.php http://www.printable-math-worksheets.com/place-value-chart.html

Technology Integration	Interdisciplinary Connections	21st Century Life and Career Skills
• Math Playground - http://www.mathplayground.com/grade_5_games.html • Khan Academy - http:www.//khanacademy.org/math/cc-fifth-grade-math • Illustrative Mathematics - http:www.//illustrativemathematics.org • Prodigy - http:www.//prodigygame.com • Learn Zillion - http:www.//learnzillion.com • aaamath - http:www.//aaamath.com/grade5.html • Math is Fun - https://www.mathsisfun.com/ • Sheppard Software - http://www.sheppardsoftware.com/math.htm • Adapted Mind - http://adaptedmind.com • Internet 4 Classrooms - http://internet4classrooms.com • Academic Skill Builders -	Next Gen Science Standards (5. Structure and Properties of Matter Unit have connections to 5.NBT.A.1; 5.NF.B.7; 5.MD.A.1; 5.MD.C.3; 5.MD.C.4) Next Gen Science Standards (5. Matter and Energy in Organisms and Ecosystems Unit have connections to 5.MD.A.1)	• CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

http://arcademicskillbuilders.com ● Math Play - http://www.math-play.com ● Class K-12 - https://www.classk12.com ● Figure This - https://figurethis.nctm.org/challenges/math_index.htm ● Freckle Education - https://www.freckle.com ● Greg Tang Math - https://gregtangmath.com • 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. • 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue. • 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data. • 8.1.5.A.5 Create and use a database to answer basic questions. • 8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data.		

Link to Additional Components including Cross Curricular Connections, Accommodations, Assessments, Etc

ELA Enduring Understanding Statements