

Branchburg Township Public Schools

Office of Curriculum and Instruction

Grade 5 Math Curriculum



Adopted by the Board of Education September 2023

This curriculum is aligned with the 2016 New Jersey Student Learning Standards in Mathematics

Curriculum Scope and Sequence

Content Area	Math	Course Title/Grade Level:	5th Grade
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	Topic/Unit Name	Suggested Pacing (Days/Weeks)
Launch	Launching enVisions	5-7 days
<u>Topic/Unit #1</u>	Understand Place Value	8 days
<u>Topic/Unit #2</u>	Use Models and Strategies to Add and Subtract Decimals	7 days
<u>Topic/Unit #3</u>	Fluently Multiply Multi-Digit Whole Numbers	10 days
<u>Topic/Unit #4</u>	Use Models and Strategies to Multiply Decimals	10 days
<u>Topic/Unit #5</u>	Use Models and Strategies to Divide Whole Numbers	9 days
<u>Topic/Unit #6</u>	Use Models and Strategies to Divide Decimals	7 days
<u>Topic/Unit #7</u>	Use Equivalent Fractions to Add Subtract Fractions	13 days
<u>Topic/Unit #8</u>	Apply Understanding of Multiplication to Multiply Fractions	12 days
<u>Topic/Unit #9</u>	Apply Understanding of Division to Divide Fractions	9 days
<u>Topic/Unit #10</u>	Represent and Interpret Data	5 days
<u>Topic/Unit #11</u>	Understand Volume Concepts	6 days
<u>Topic/Unit #12</u>	Convert Measurements	10 days
<u>Topic/Unit #13</u>	Write and Interpret Numerical Expressions	5 days
<u>Topic/Unit #14</u>	Graph Points on the Coordinate Plane	5 days
<u>Topic/Unit #15</u>	Algebra: Analyze Patterns and Relationships	5 days
<u>Topic/Unit #16</u>	Geometric Measurement: Classify Two-Dimensional Figures	5 days

Launch/Topic 1	Launching enVisions / Understand Place Value	Approximate Pacing	5-7 days/ 8 days
STANDARDS			
NJSLS (Math)			
<p>5.NBT.A.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.</p>			
<p>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.</p>			
<p>5.NBT.A.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$</p>			
<p>5.NBT.A.3b Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>			
<p>5.NBT.A.4 Use place value understanding to round decimals to any place.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning 			
Interdisciplinary Connections:		CS & DT::	
<p>W.5.4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Example- During lesson 1-5's solve and share, students will explain how they use the math they know to solve problems regarding comparing decimals. Students will share their explanation with their peers.)</p>		<p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.</p> <p>8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. <i>Example: students use various platforms to practice their</i></p>	

<p>RI.5.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. (Example- During lesson 1-1's visual learning bridge, students will use place value specific vocabulary, such as factors and exponent, to answer specific math questions regarding patterns in numbers.)</p> <p>6.1.8.B.1.a. Describe migration and settlement patterns of Native American groups, and explain how these patterns affected interactions in different regions of the Western Hemisphere. (Example- During lesson 1-1's solve and share activity, students will be explaining the patterns between place value and powers of 10.)</p> <p>5.LS2.1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (Example- During Topic 1, students work to estimate the number of insects there are for all the people in their household, class, and school.)</p>	<p><i>math skills during math workshop and communicate with each other (ALEKS, Flipgrid, Nearpod, etc)</i></p> <p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. (Example-In lesson 1-2 students will use a place-value chart to determine place value understanding. When a digit moves one place to the left it will be worth 10 times the value of the previous digit and when it moves to the right, it will be worth 1/10 of the value of the previous digit.)</p>
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CLKS:

An individual's financial traits and habits affect his/her finances.

9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions.

9.1.5.FP.2: Identify the elements of being a good steward of money. Spending choices and their intended and unintended consequences impact financial outcomes and personal wellbeing.

9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences.

9.1.5.FP.4: Explain the role of spending money and how it affects wellbeing and happiness (e.g., "happy money," experiences over things, donating to causes, anticipation, etc.).
(Example- In lessons 1-3, 1-4, and 1-6's problem solving questions, students determine how much money is owed on a bill, how much was raised for charity, how much money was spent on school supplies and how much is left.)

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

- Students will understand:
- Basic facts and place-value patterns can be used to find products when one factor is a multiple of 10, 100, or 1,000; an exponent with 10 as the base can be used to represent powers of 10.
 - Each digit's place value in a number provides a way to understand the number's value, as well as that our number system is based on powers of 10. Whenever we get 10 in one place value, we move to the next greater place value.

- Digits within decimal numbers have place value. Understanding a digit's decimal place value in a number helps determine the value of the number.
- Place value can be used to compare and order whole numbers and decimals.
- Rounding is a process for finding the multiple of 10, 100, and so on, or of 0.1, 0.01, and so on, closest to a given number.

Essential Questions:

- How are whole numbers and decimals written, compared, and ordered?

STUDENT LEARNING OBJECTIVES

Key Knowledge

Students will know:

Base
Compare
Equivalent Decimals
Expanded Form
Exponent
Number Name
Place Value
Power
Rounding
Thousandths
Value

Process/Skills/Procedures/Application of Key Knowledge

Students will be able to:

- Use patterns and the properties of multiplication to calculate a product when multiplying by a power of 10; use whole-number exponents to write powers of 10.
- Read and write whole numbers using standard form, expanded form, and number names.
- Represent decimals to thousandths as fractions and fractions with denominators of 1,000 as decimals
- Read and write numbers with decimals through thousandths using standard form, expanded form, and number names; identify equivalent decimals.
- Use place value to compare decimals through thousandths
- Use place value to round decimals to different places.

ASSESSMENT OF LEARNING

Summative Assessment
(Assessment at the end of the learning period)

Topic 1 Online Assessment

Formative Assessments
(Ongoing assessments during the learning period to inform instruction)

Quick Checks, Independent Practice page in journal, anecdotal notes

Alternative Assessments (Any learning activity or assessment that asks students to *perform to*

Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP

demonstrate their knowledge, understanding and proficiency)	
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 2	Use Models and Strategies to Add and Subtract Decimals	Approximate Pacing	7 days
STANDARDS			
NJSLS (Math)			
5.NBT.A.4 Use place value understanding to round decimals to any place.			
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.			
Standards for Mathematical Practice			

<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	
Interdisciplinary Connections:	CS & DT:
<p>5-LS2-1: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (Example: In the Topic 2 and science unit 3, students research the human food web and write and solve decimal addition and subtraction problems for the amounts of food the consumers need.)</p>	<p>8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task. (Example- In lesson 2-4 Students use strategies such as using properties of addition, compensation, using bar models to add and subtract decimals.)</p>
CLKS:	
<p>9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences. (Example- In lesson 2-3, students use models to determine the monthly cost of using devices.)</p> <p>9.1.5.EG.1: Explain and give examples of what is meant by the term “tax.”</p> <p>9.1.5.EG.2: Describe how tax monies are spent. (Example- In lesson 2-2, students estimate amounts of money to solve word problems involving with tax and without tax.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> • There’s more than one way to do a mental calculation. Mental addition and subtraction involve changing one or more numbers so that calculations are easy to do. • There is more than one way to estimate a sum or difference. To estimate sums and differences, numbers are replaced with other numbers that are easier to add and subtract. • Place-value blocks can be used to add and subtract decimals. Models and strategies for adding or subtracting multi-digit decimals are just an extension of models and strategies for adding and subtracting whole numbers. • Adding multi-digit decimals is similar to adding multi-digit whole numbers. • Subtracting multi-digit decimals is similar to subtracting multi-digit whole numbers. 	

Essential Questions: <ul style="list-style-type: none"> • How can sums and differences of decimals be estimated? • What are some common procedures for adding and subtracting decimals? • How can sums and differences be found mentally? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<i>Students will know:</i> Associative Property of Addition Bar Diagram Commutative Property of Addition Compatible Numbers Compensation Digit Estimate Hundredths Partial Differences Rounding	<i>Students will be able to:</i> <ul style="list-style-type: none"> • Use properties of addition and strategies to solve problems mentally. • Use rounding or compatible numbers to estimate sums and differences. • Model sums and differences of decimals. • Add decimals to hundredths using familiar strategies, such as partial sums • Subtract decimals to hundredths using familiar strategies, such as partial differences.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 2 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

measure progress towards grade level standards; given 2-3 X per year)	
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 3	Fluently Multiply Multi-Digit Whole Numbers	Approximate Pacing	10 days
STANDARDS			
NJSLS (Math)			
5.NBT.A.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.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.			
5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.			
Standards for Mathematical Practice			
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 			

<p>4. Model with mathematics.</p> <p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>	
Interdisciplinary Connections:	CS & DT:
<p>2.5.4.A.1 Explain and perform essential elements of movement skills in both isolated settings (i.e., skill practice) and applied settings (i.e., games, sports, dance, and recreational activities). (Example- In P.E., students run/jog different distances. In lesson 3-4, students solve problems relating to distances Ms. Silva ran and compare and contrast them.)</p> <p>6.1.8.B.1.a. Describe migration and settlement patterns of Native American groups, and explain how these patterns affected interactions in different regions of the Western Hemisphere. (Example- During lesson 1-1's solve and share activity, students will be explaining the patterns between place value and powers of 10.)</p> <p>5.PS1.2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. (Example- During Topic 6's enVision STEM project, students will be working to explain the relationship between the changes in states of matter of water. They will then create and solve division problems that involve decimals as they relate to rain and snowfall.)</p>	<p>8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models (Example- In lesson 3-1, students multiply greater numbers by powers of 10 to determine the number of party invitations in packages of 10, 100, 1000 and use patterns to explain their answer.)</p>
CLKS:	
<p>9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions (Example- In lesson 3-7, students solve for two car payment options to see which would cost less.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> Place-value patterns and mental math can be used to write the product of a whole number and a power of 10. Estimating products is a useful technique to quickly solve mathematical problems and understand the value of numbers used in real-world situations. There is more than one way to estimate a product. 	

- The standard multiplication algorithm is a shortcut for the expanded algorithm. Regrouping is used rather than showing all the partial products.
- The standard multiplication algorithm involves breaking the calculations into simpler ones using place value and properties of operations. Regrouping is used rather than showing all partial products.
- The meaning of multiplication is the same, no matter the size of the numbers. Both the partial products method and the standard algorithm for multiplying whole numbers are based on properties of operations.
- The process for multiplying factors with zeros is always the same regardless of the size of the numbers with zeros. Estimation is a strategy that can be used to check the final product for reasonableness.
- The meaning of multiplication is the same, no matter the size of the numbers. The standard algorithm for multiplying whole numbers is based on properties of operations and can be used to solve problems.
- Using a bar diagram and writing an equation are two strategies that can be used to solve multi-step problems. Once the problem has been solved, you can represent the problem again using a different strategy to check your answer(s) for reasonableness.

Essential Questions:

- What are the standard procedures for estimating and finding products of multi-digit numbers?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know:</p> <ul style="list-style-type: none"> Bar Diagram Compatible Numbers Expanded Form Overestimate Partial Products Power Power of 10 Regrouping Standard Algorithm Underestimate Variable Zero Property of Multiplication Zero Property of Addition 	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Use place-value understandings and patterns to mentally multiply whole numbers and powers of 10. • Use rounding and compatible numbers to estimate products. • Use place value and the standard algorithm to multiply multi-digit numbers by 1-digit numbers. • Use the expanded and the standard algorithm to multiply 2-digit by 2-digit numbers. Estimate to check if products are reasonable. • Multiply 3-digit by 2-digit numbers by adding partial products or by using the standard algorithm. • Use knowledge about place value and multiplying with 2-digit and 3-digit numbers to multiply with zeros. • Use properties and the standard algorithm for multiplication to find the product of multi-digit numbers. • Use models and strategies to solve word problems.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 3 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 4	Use Models and Strategies to Multiply Decimals	Approximate Pacing	10 days
STANDARDS			
NJSLS (Math)			
<p>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.</p>			
<p>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.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly (Example-In lesson 5-6, students will explain their answer to the Convince Me! problem by engaging in a collaborative discussion.)</p>		<p>8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task. (Example- In lesson 4-4, students work using the traditional method to solve various problems.)</p>	
CLKS:			
<p>9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions. (Example: In lesson 4-2, students use strategies to solve for how much money the wedding planner can spend on cheese.)</p> <p>9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences (Example- In lesson 4-2, students use a place value chart to determine how much money buttons and T-shirts cost. Given a specific amount of money, students determine how many of each they can purchase.)</p>			

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will understand:

- Patterns can be identified and used to multiply decimals by 10, 100, and 1,000. Representations such as symbols, diagrams, and words can help you multiply and communicate mathematical ideas.
- You can estimate the product of a decimal and a whole number by using compatible numbers and rounding. Comparing two strategies can help you decide which strategy provides an estimate that is closer to the exact answer, or if an estimate is an underestimate or an overestimate.
- Place-value models can be used to represent multiplying a whole number and a decimal. Products can be found using the models.
- The steps involved in multiplying a decimal and a whole number are similar to the steps used in multiplying two whole numbers. Place value in the factors determines the placement of the decimal point in the product.
- Steps for multiplying decimals are similar to steps for multiplying whole numbers. Place value determines the placement of the decimal point in a product.
- The partial products process for multiplying whole numbers can be used for multiplying with decimals. You can use models and other strategies to find the answer and determine if it is reasonable.
- The Associative and Commutative Properties can be used to break apart and multiply two decimals.
- Thinking about the relative size of the decimals being multiplied can help you determine the relative size of the product and the location of the decimal point in the product.

Essential Questions:

- What are some common procedures for estimating and finding products involving decimals?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p><i>Students will know:</i> Area Area Model Associative Property Compatible Numbers Decimal Estimate Factors Patterns Product Repeated Addition Rounding</p>	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Use knowledge about patterns to find the product of a decimal number and a power of 10. ● Use rounding and compatible numbers to estimate the product of a decimal and a whole number. ● Use models to represent multiplying a decimal and a whole number. ● Use place-value understanding and an algorithm for multiplying whole numbers to multiply a decimal and a whole number. ● Use grids to model decimals and find the product of a decimal and a decimal.

- Multiply decimals using partial products and models.
- Use properties to multiply decimals.
- Use number sense and reasoning to place the decimal point in a product.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 4 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

RESOURCES

Core instructional materials: Envision ALEKS
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources

Modifications for Learners

See [appendix](#)

Topic 5	Use Models and Strategies to Divide Whole Numbers	Approximate Pacing	9 days
STANDARDS			
NJSLS (Math)			
<p>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, 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.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>SL.5.4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. (Example - In Lesson 5-8, students will choose a strategy to divide and explain their thinking and reasoning as to why they chose a specific strategy.)</p>		<p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. (Example-In lesson 5-1, students will use a chart to determine how many boxes will be needed for muffins.)</p>	
CLKS:			
<p>9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p> <p>9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care,</p>			

medicine, education) and examples of these requirements
 (Example- In this topic, students learn how to use partial quotients to divide. Careers such as architects, designers, builders, etc. determine the amount of space given.)

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will understand:

- Division problems with dividends and divisors that are multiples of 10 can be solved using basic facts and patterns. Multiplication can be used to check whether quotients are reasonable.
- Using compatible numbers is one of many estimation strategies that can be used to estimate a quotient. Multiplication can be used to check whether quotients are reasonable.
- Area models and properties are two ways to find quotients with multi-digit whole numbers.
- Dividing with 2-digit divisors is just an extension of the steps for dividing with 1-digit divisors. Estimation and place value can help determine the placement of digits in the quotient.
- Use place value and area models to solve division problems involving 3-digit dividends and 2-digit divisors.
- Dividing with 2-digit divisors is just an extension of dividing with 1-digit divisors. Real-world situations involving equal shares can be solved using division.
- Different strategies can be used to divide with 2-digit divisors. Estimating quotients and the relationship between multiplication and division are used with most strategies.

Essential Questions:

- What are some common procedures for division and why do they work?

STUDENT LEARNING OBJECTIVES

Key Knowledge

Students will know:
 Basic Fact
 Compatible Numbers
 Divide
 Dividend
 Divisor
 Estimate
 Multi-Step Problem
 Ones
 Partial Quotients
 Patterns
 Quotient

Process/Skills/Procedures/Application of Key Knowledge

- Students will be able to:**
- Use place-value patterns and mental math to find quotients.
 - Use compatible numbers and place-value patterns to estimate quotients.
 - Use models to find quotients.
 - Solve division problems using partial quotients.
 - Use place value and sharing to divide by 2-digit divisors.
 - Use place value and sharing to divide greater dividends.
 - Select from different strategies to divide 3- and 4-digit numbers by 2-digit numbers.

Remainder Tens	
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 5 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 6	Use Models and Strategies to Divide Decimals	Approximate Pacing	7 days
STANDARDS			
NJSLS (Math)			
<p>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.</p>			
<p>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.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>5-PS2B.1: The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (Example- In math, students will determine their weight on various planets by multiplying the planet's surface gravity by the student's body weight. In Science students explore the gravitational pull on various objects).</p> <p>6.1.8.B.1.a. Describe migration and settlement patterns of Native American groups, and explain how these patterns affected interactions in different regions of the Western Hemisphere. (Example- During lesson 1-1's solve and share activity, students will be explaining the patterns between place value and powers of 10.</p>		<p>8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data. (Example- In lesson 6-4, students determine the length and width of gardens.)</p>	

CLKS:	
9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate). (Example- In lesson 6-3, students solve problems regarding receiving money for recycling aluminum cans.)	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> Place-value patterns can be used to divide decimals by powers of 10. Rounding and compatible numbers can be used to estimate quotients with decimals. Strategies for dividing decimals are an extension of strategies for dividing whole numbers. Place-value blocks can be used as a tool for dividing decimals. An area model uses the inverse relationship between multiplication and division to show dividing a decimal by a 2-digit whole number. Models and the relationship between multiplication and division can be used to divide a decimal by a decimal. 	
<p>Essential Questions:</p> <ul style="list-style-type: none"> What are some common procedures for estimating and finding quotients involving decimals? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know:</p> <p>Area Compatible Numbers Decimal Point Dividend Divisor Estimate Models Power of 10 Quotient Reasoning Rounding</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> Use mental math and place-value patterns to divide a decimal by a power of 10. Use reasoning and strategies such as rounding and compatible numbers to estimate quotients in problems with decimals. Use models to help find quotients in problems involving decimals. Use models to visualize the relationship between division and multiplication to divide decimals by 2-digit whole numbers. Use models to divide a decimal by a decimal.
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Topic 6 Online Assessment</p>

Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 7	Use Equivalent Fractions to Add and Subtract Fractions	Approximate Pacing	13 days
STANDARDS			
NJSLS (Math)			
<p>5.NF.A.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, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)</p>			
<p>5.NF.A.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 $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>2.1.4.A.1 Explain the physical, social, emotional, and mental dimensions of personal wellness and how they interact. (Example- During P.E., students will plan an athletic center in which they determine the physical amount of space needed to properly engage in physical sports.)</p>		<p>8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate. (Example: In lesson 7-2, students determine there are multiple ways to divide wholes into equal-sized parts and discuss the reasoning for choosing how they represented their portion.)</p>	
CLKS:			
<p>9.4.5.TL.5: Collaborate digitally to produce an artifact (Example-Students will use: Flip Grid, google slides, or google practice sets to demonstrate how to solve number stories involving addition and subtraction of fractions.)</p>			
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			

Students will understand:

- A number line can be used to determine if estimates are reasonable.
- Fractions with unlike denominators can be represented using equivalent fractions with the denominators.
- Fractions with unlike denominators can be added by replacing them with equivalent fractions that have common denominators.
- Fractions with unlike denominators can be subtracted by replacing them with equivalent fractions that have common denominators.
- Addition and subtraction of fractions may be needed to solve a problem.
- Sums and differences of mixed numbers can be estimated by rounding to the nearest whole number or by using benchmark fractions.
- Models can be used to show different ways of adding mixed numbers.
- Adding mixed numbers is an extension of adding fractions
- Models can be used to show different ways of subtracting mixed numbers. Subtracting mixed numbers can be thought about as taking away just as subtracting whole numbers and subtracting fractions can be thought about as taking away.
- Subtract mixed numbers using equivalent fractions and a common denominator.
- Addition and subtraction of mixed numbers may both be needed to solve a problem.

Essential Questions:

- How can sums and differences of fractions and mixed numbers be estimated?
- What are common procedures for adding and subtracting fractions and mixed numbers?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know:</p> <ul style="list-style-type: none"> Bar Diagram Benchmark Fraction Common Denominator Denominator Difference Equivalent Fractions Fraction Strips Mixed Numbers Model Numerator Numerical Expression Partition Regroup Sum 	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Estimate sums and differences of fractions by using the nearest half or whole number. • Find common denominators for fractions with unlike denominators. • Add fractions with unlike denominators using equivalent fractions with a common denominator. • Subtract fractions with unlike denominators. • Write equivalent fractions to add and subtract fractions with unlike denominators. • Estimate sums and differences of fractions and mixed numbers. • Add mixed numbers using models. • Add mixed numbers using equivalent fractions and a common denominator.

- Use models to subtract mixed numbers.
- Subtract mixed numbers using equivalent fractions and a common denominator.
- Add and subtract mixed numbers using equivalent fractions and a common denominator.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 7 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

RESOURCES

Core instructional materials: Envision ALEKS
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project

Additional Resources
Modifications for Learners
See appendix

Topic 8	Apply Understanding of Multiplication to Multiply Fractions	Approximate Pacing	12 days
STANDARDS			
NJSLS (Math)			
<p>5.NF.B.4a Interpret the product $(a/b) \times q$ as a part of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(\frac{2}{3}) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(\frac{2}{3}) \times (\frac{4}{5}) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$).</p>			
<p>5.NF.B.4b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p>			
<p>5.NF.B.5a Comparing the size of a product to the size of the other factor, without performing the indicated multiplication.</p>			
<p>5.NF.B.5b Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a) / (n \times b)$ to the effect of multiplying a/b by 1.</p>			
<p>5.NF.B.6 Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			

Interdisciplinary Connections:	CS & DT:
<p>5.PS1.2: Make observations and measurements to identify materials based on their properties. (Example: In lessons 8-3, students will calculate the fraction of remaining hydrogen atoms in water molecules.)</p> <p>2.1.4.A.1 Explain the physical, social, emotional, and mental dimensions of personal wellness and how they interact. (Example- In lesson 8-6 students will determine the area of gardens.)</p> <p>2.1.6.A.1 Explain how health data can be used to assess and improve each dimension of personal wellness. (Example- In lesson 8-7, students calculate ingredients to portion out sizes).</p>	<p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. (Example: In P.E., students run/jog different distances and in math (lesson 8-8) students solve real world problems with multiplying days and distance ran with fitness goals.</p>
CLKS:	
<p>9.2.5.CAP.7: Identify factors to consider before starting a business.</p> <p>9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements (Example- In lesson 8.1, chefs and bakers must utilize the correct portions of ingredients to accurately make food.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand that:</p> <ul style="list-style-type: none"> ● Models can be used to show that the product of a fraction and a whole number can be interpreted as repeated addition. ● Multiplying a whole number by a fraction involves both multiplication and division. Models can be used to represent multiplying a whole number by a fraction. ● To multiply a whole number and a fraction, write a fraction a/b as the product $a \times 1/b$, multiply whole numbers, and write the product as a fraction or mixed number. ● The meaning of multiplying a whole number by a fraction can be extended to multiplying a fraction by a fraction. Different models can be used to show this connection. ● To find the product of two fractions, multiply the numerators, and then multiply the denominators. Recognize when a product is less than or greater than 1. ● An area model can be used to represent the product of two fractions. ● Multiplying mixed numbers is an extension of multiplying fractions. ● The relative size of the factors can be used to determine the relative size of the product. 	

Essential Questions: <ul style="list-style-type: none"> • What does it mean to multiply whole numbers and fractions? • How can multiplication with whole numbers and fractions be shown using models and symbols? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: Area Area Model Denominator Estimate Fraction Mixed Number Numerator Product Repeated Addition Scaling Factor Unit Fraction	Students will be able to: <ul style="list-style-type: none"> • Multiply a fraction by a whole number. • Multiply a whole number by a fraction. • Multiply fractions and whole numbers. • Use models to multiply two fractions. • Multiply two fractions. • Find the area of a rectangle using fractions and diagrams. • Use models equations and previously learned strategies to multiply mixed numbers. • Compare the size of the product to the size of one factor without multiplying to consider multiplication as scaling. • Use previously learned knowledge to make sense of problems and persevere in solving them.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 8 Online Assessment & Cumulative 1-8
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

achievement data and measure progress towards grade level standards; given 2-3 X per year)	
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 9	Apply Understanding of Division to Divide Fractions	Approximate Pacing	9 days
STANDARDS			
NJSLS (Math)			
<p>5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving 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 $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. 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?</p>			

<p>5.NF.B.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story for context for $(\frac{1}{3}) \div 4 = 12$ because $(\frac{1}{12}) \times 4 = \frac{1}{3}$.</p>	
<p>5.NF.B.7b Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (\frac{1}{5})$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (\frac{1}{5}) = 20$ because $20 \times (\frac{1}{5}) = 4$.</p>	
<p>5.NF.B.7c Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g.m by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $\frac{1}{3}$-cup servings are in 2 cups of raisins?</p>	
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	
Interdisciplinary Connections:	CS & DT:
<p>5.PS1.3: Make observations and measurements to identify materials based on their properties. (Example: In Topic 9 STEM Project, students will conduct a survey as to how people use thermal energy. Students will organize their data in a table. Using this information, students will make up and solve problems with fraction division.)</p> <p>W.5.7. Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.</p>	<p>8.2.5.ITH.1: Explain how societal needs and wants influence the development and function of a product and a system. (Example: In lesson 9-6, students determine how many wind turbines could be installed based on criteria.)</p>

<p>(Example: Students will use the internet or other sources to learn about thermal energy. Students will write a summary of the information they found.)</p> <p>RI 5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. (Example: Students will identify, research, and define vocabulary words related to this topic).</p>	
CLKS:	
<p>9.2.5.CAP.7: Identify factors to consider before starting a business.</p> <p>9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements (Example- In topic 9 , students discuss why division of fractions is helpful in careers such as bakers, chefs, farmers, chemists, etc.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> ● A fraction can be interpreted as division of the numerator by the denominator. ● A fraction or mixed number can represent the quotient of two whole numbers. ● Models can be used to show how dividing a whole number by a fraction relates to multiplication. ● Visual fraction models can be used to represent and solve problems involving whole numbers divided by unit fractions. ● Dividing a unit fraction by a non-zero whole number can be modeled by showing part of a whole divided into equal parts. ● Area models and number lines can be used to represent and solve division problems involving whole numbers and unit fractions. ● Some problems can be solved by first finding and solving one or more sub-problems, and then using the answer(s) to solve the original problem. 	
<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How are fractions related to division? ● How can you divide with whole numbers and unit fractions? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge

<p>Students will know: Area Model Equal Parts Equation Fraction Inverse Relationship Mixed Numbers Repeated Reasoning Unit Fraction</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Understand how fractions are related to division. ● Implement division of fractions to show quotients as fractions and mixed numbers. ● Use multiplication to divide a whole number by a unit fraction. ● Use models, such as pictorial models or a number line, to show dividing a whole number by a unit fraction. ● Use models to divide unit fractions by non-zero whole numbers. ● Use models to divide whole numbers and unit fractions. ● Check your answer using multiplication. ● Solve multi-step problems involving division with unit fractions.
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Topic 9 Online Assessment</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Quick Checks, Independent Practice page in journal, anecdotal notes</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16</p>
RESOURCES	

<p>Core instructional materials: Envision ALEKS</p>
<p>Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources</p>
Modifications for Learners
See appendix

Topic 10	Represent and Interpret Data	Approximate Pacing	5 days
STANDARDS			
NJSLS (Math)			
<p>5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</p>			
<p>5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>			

5.NF.A.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 $3/7 < 1/2$.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Interdisciplinary Connections:	CS & DT:
5.PS1.3: Make observations and measurements to identify materials based on their properties. (Example: In Topic 9 STEM Project, students will conduct a survey as to how people use thermal energy. Students will organize their data in a table. Using this information, students will make up and solve problems with fraction division.)	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data. (Example- In lesson 10-2, students organize data using a graphic organizer before plotting the data on a line plot.)

CLKS:

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements
 (Example: In topic 10, students learn that certain careers and jobs analyze data to make decisions.)

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will understand:

- Line plots are one way to organize and represent numerical data collected in a survey.
- Line plots are one way to organize and represent numerical data which can be used to see how data are distributed.
- Line plots can be used to solve problems that involve data.
- Good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

Essential Questions:

- How can line plots be used to represent data and answer questions?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know: Critique Reasoning Data Frequency Table Line Plot</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Read and analyze line plots. • Organize and display data in a line plot. • Solve problems using data in a line plot. • Critique the reasoning of others using understanding of line plots and fractions.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 10 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

measure progress towards grade level standards; given 2-3 X per year)	
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 11	Understand Volume Concepts	Approximate Pacing	6 days
STANDARDS			
NJSLS (Math)			
5.MD.C.3a A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.			

5.MD.C.3b A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume, and can be used to measure volume.	
5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
5.MD.C.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.	
5.MD.C.5b Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.	
5.MD.C.5c Recognize volume as additive. Find volumes of solid figures comprised of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.	
Standards for Mathematical Practice	
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	
Interdisciplinary Connections:	CS & DT:

<p>W 5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <p>5-ESS2-1: Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.(Example: In Topic 11, STEM Project, students will explore sustainability and “going green.” Students will design a more sustainable “green” school and create a model to showcase their work.)</p>	<p>8.2.5.ED.5: Describe how specifications and limitations impact the engineering design process. (Example: In topic 11, students must understand volume concepts in order to know how much space an object can take up without overlapping.)</p>
CLKS:	
<p>9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (Example-In lesson 11-3, students combine volumes of multiple prisms by separating them into two rectangular prisms by using formulas to find the volume of each and then adding the volumes.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> ● Volume can be measured by counting the number of cubic units needed to fill a three-dimensional figure. ● Formulas can be used to find the volume of rectangular prisms and cubes. ● The volume of a solid figure comprised of rectangular prisms can be found by adding the volumes of the rectangular prisms. ● Some problems can be solved by first finding and solving one or more sub-problems, and then using the answer(s) to solve the original problem. 	
<p>Essential Questions:</p> <ul style="list-style-type: none"> ● What is the meaning of volume of a solid? ● How can the volume of a rectangular prism be found? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge

<p>Students will know: Cubic Unit Formula Rectangular Prism Solid Figures Tools Unit Cube Volume</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Find the volume of solid figures. • Find the volume of rectangular prisms using a formula. • Find the volume of a solid figure that is the combination of two or more rectangular prisms. • Use models, prior knowledge of volume and previously learned strategies to solve word problems involving volume.
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Topic 11 Online Assessment</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Quick Checks, Independent Practice page in journal, anecdotal notes</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16</p>
RESOURCES	
<p>Core instructional materials: Envision ALEKS</p>	

Supplemental materials:

Leveled worksheets

Number Talks

3-ACT Math Tasks

Pick-a-Project

[Additional Resources](#)**Modifications for Learners**See [appendix](#)

Topic 12	Convert Measurements	Approximate Pacing	10 days
STANDARDS			
NJSLS (Math)			
<p>5.MD.A.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.</p>			
<p>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.</p>			
<p>5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.</p>			
<p>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, 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.</p>			

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Interdisciplinary Connections:

RI 5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
(Example - In lesson 12-8, students will solve word problems using measurement conversions and explain the relationship between these values.)

L.5.4.B Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).
(Example - In Unit 12, students will identify the meaning of units of measurement by applying their knowledge of Latin and Greek affixes as it relates to the meaning of words. e.g., the combining form milli-means thousand.)

5.ESS2.1: Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
(Example: In Topic 12 STEM Project, students will investigate the Grand Canyon and Colorado River including their diverse ecosystems. Students will explore erosion by contrasting it to weathering and deposition. Students will make up and solve problems involving measurement units and conversions.)

CS & DT:

8.2.5.ED.5: Describe how specifications and limitations impact the engineering design process.
(Example: Students will work to solve number stories involving converting measurements.)

CLKS:

9.4.2.TL.3: Enter information into a spreadsheet and sort the information.

The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.

(Example-In Science, students are recording the effects and impacts the objects have on other objects when falling. Effects include time, impact width, capacity lost.)

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will understand:

- Multiplication and division are used to convert among different units of length.
- Multiplication and division are used to convert among different units of capacity.
- Multiplication and division are used to convert among different units of weight.
- Multiplication and division are used to convert among different metric units of length.
- Multiplication and division are used to convert among different units of mass.
- Multiplication and division are used to convert between units of time.
- Some problems can be solved by first finding and solving one or more sub-problems, and then using the answer(s) to solve the original problem.

Essential Questions:

- What are customary measurement units and how are they related?
- What are metric measurement units and how are they related?

STUDENT LEARNING OBJECTIVES

Key Knowledge

Students will know:

Capacity
Centimeter
Centimeter Ruler
Cup
Customary Units of Length
Customary Units of Weight

Process/Skills/Procedures/Application of Key Knowledge

Students will be able to:

- Convert customary units of length.
- Convert customary units of capacity.
- Convert customary units of weight.
- Convert metric units of length.
- Convert metric units of capacity.
- Convert metric units of mass.

<p>Dimensions Foot Fluid Ounce Gallon Gram Hour Inch Inch Ruler Kilogram Kilometer Liter Mass Meter Meter Stick Metric Units of Length Minute Mile Milligram Milliliter Millimeter Ounce Pint Pound Precision Quart Second Ton Yard Yard Stick</p>	<ul style="list-style-type: none"> • Convert units of time. • Solve real-world problems with measurement conversions.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the le	Topic 12 Online Assessment

arning period)	
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 13	Write and Interpret Numerical Expressions	Approximate Pacing	5 days
STANDARDS			
NJSLS (Math)			
<p>5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>			
<p>5.OA.A.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 $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>2.1.6.A.1 Explain how health data can be used to assess and improve each dimension of personal wellness. (Example- In P.E., students calculate their heart rate after cardio and at rest using multiplication.)</p> <p>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (Example: In Topic 13, STEM Project, students will investigate how a food web differentiates from a food chain because it shows how</p>		<p>8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task. (Example-Students use PEMDAS to solve for expressions.)</p>	

energy paths in an ecosystem overlap. Students will draw arrows to show how energy moves throughout the system.)	
CLKS:	
9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. (Example-Students solve for expressions and check their work using a calculator.)	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
Students will understand: <ul style="list-style-type: none"> • There is an agreed-upon order in which operations are carried out in a numerical expression. • Numerical expressions can represent the calculations needed to solve a problem. • Numerical expressions show relationships among the quantities involved, which you can interpret without evaluating the expressions. 	
Essential Questions: <ul style="list-style-type: none"> • How is the value of a numerical expression found? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know:</p> <p>Braces Brackets Evaluate Interpret Numerical Expressions Order of Operations Parentheses</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Use the order of operations to evaluate expressions • Write simple expressions that show calculations with numbers. • Interpret numerical expressions without evaluating them.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 13 Online Assessment

Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	

Topic 14	Graph Points on the Coordinate Plane	Approximate Pacing	5 days
STANDARDS			
NJSLS (Math)			
<p>5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p>			
<p>5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	
<p>6.1.8.B.1.b Analyze the world in spatial terms (e.g., longitude, latitude) using historical maps to determine what led to the exploration of new water and land routes (Example-In Social Studies, finding locations on a map is similar to plotting points on a grid, whereas your longitude is like your x-axis and your latitude is like your y-axis.)</p>		<p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide. 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.</p>	

		(Example- In Social Studies, students research local maps to identify location using longitude and latitude. In lesson 14-1, students look at a map and locate landmarks based on the coordinate grid.)
CLKS:		
9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements. (Example- In this topic, students discuss jobs and careers that involve coordinate grids and graphs.)		
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS		
Students will understand: <ul style="list-style-type: none"> • The coordinate grid system uses two perpendicular number lines intersecting at 0 to name the location of points in the plane. • A coordinate grid has an x-axis and a y-axis that can be used to locate points in two dimensions. • Points that lie on a line can be connected and extended to solve problems. 		
Essential Questions: <ul style="list-style-type: none"> • How are points plotted? • How are relationships shown on a graph? 		
STUDENT LEARNING OBJECTIVES		
Key Knowledge		Process/Skills/Procedures/Application of Key Knowledge
<i>Students will know:</i> Coordinate Grid Graph Intersect Ordered Pair Origin Table X-axis X-coordinate		<i>Students will be able to:</i> <ul style="list-style-type: none"> • Locate points on a coordinate grid. • Graph points on a coordinate grid. • Solve real-world problems by graphing points.

Y-axis Y-coordinate	
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 14 Online Assessment
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	

Modifications for Learners

See [appendix](#)

Topic 15	Algebra: Analyze Patterns and Relationships	Approximate Pacing	5 days
STANDARDS			
NJSLS (Math)			
<p>5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</p>			
<p>5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>			
<p>Standards for Mathematical Practice</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 			
Interdisciplinary Connections:		CS & DT:	

<p>RL. 5.5 Explain how a series of chapters, scenes or stanzas fits together to provide the overall structure of a particular story, drama, or poem. (Example - In the poetry unit, students will analyze the pattern of stanzas within a poem to determine the type of poem).</p> <p>SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly (Example-In lesson 15-1, students will explain their prediction for savings patterns based on their analysis of the numerical patterns in a collaborative discussion.)</p>	<p>8.1.5.DA.4: Organize and present climate change data visually to highlight relationships or support a claim. Many factors influence the accuracy of inferences and predictions.</p>
CLKS:	
<p>9.1.5.FI.1: Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies. 9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences. (Example- In lesson 15-1, students determine how much money Emma and Jorge will earn after placing money in their savings account for 5 weeks. Students record in a table.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand :</p> <ul style="list-style-type: none"> ● Two patterns can be extended using the same rule, and there will be a relationship between the patterns. ● Two patterns can be extended using rules, and there will be a relationship between the patterns. ● A graph can show the relationship between two number sequences. 	
<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How can number patterns be analyzed and graphed? ● How can number patterns and graphs be used to solve problems? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge

<p>Students will know: Corresponding Terms Number Sequence Numerical Pattern Ordered Pair Rule Table</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> Analyze numerical patterns. Use tables to identify relationships between patterns. Analyze patterns and graph ordered pairs generated from number sequences.
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Topic 15 Online Assessment</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Quick Checks, Independent Practice page in journal, anecdotal notes</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16</p>
RESOURCES	
<p>Core instructional materials: Envision ALEKS</p>	
<p>Supplemental materials:</p>	

Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources
Modifications for Learners
See appendix

Topic 16	Geometric Measurement: Classify Two-Dimensional Figures	Approximate Pacing	5 days
STANDARDS			
NJSLS (Math)			
5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.			
5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.			
Standards for Mathematical Practice 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.			
Interdisciplinary Connections:		CS & DT:	

<p>L.5.4.B Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis). (Example - In Unit 16, students will identify the meaning of geometry terms using their knowledge of Latin and Greek affixes as it relates to the meaning of words. e.g., tri- means 3, a triangle has 3 sides and angles.)</p>	<p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. (Example-In lesson 16-3, students use graphic organizers to sort quadrilaterals based on criteria.)</p>
CLKS:	
<p>9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a). (Example-In lesson 16-3, students sort shapes based on student criteria and participate in conversations with peers on the ways they sorted them.)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
<p>Students will understand:</p> <ul style="list-style-type: none"> ● Triangles are classified by their sides and their angles. ● Quadrilaterals are classified by their sides and by their angles. 	
<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How can triangles and quadrilaterals be described, classified, and named? 	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know: Acute Triangle Equilateral Triangle Isosceles Triangle Obtuse Triangle Parallelogram Quadrilateral Rectangle Right Triangle Rhombus Scalene Triangle Square Trapezoid</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Classify triangles by their angles and sides. ● Classify quadrilaterals by their properties. ● Classify quadrilaterals using a hierarchy.

Venn Diagram	
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 16 Online Assessment & Cumulative 1-16
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Quick Checks, Independent Practice page in journal, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 5 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision ALEKS	
Supplemental materials: Leveled worksheets Number Talks 3-ACT Math Tasks Pick-a-Project Additional Resources	
Modifications for Learners	
See appendix	