Branchburg Township Public Schools

Office of Curriculum and Instruction

Grade 3 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:**	3rd Grade

Topic/Unit Name		Suggested Pacing (Days/Weeks)
Topic #1	Launch/Understand Multiplication and Division of Whole Numbers	15 days
Topic #2	Multiplication Facts: Use Patterns	7 days
Topic #3	Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8	7 days
Topic #4	Use Multiplication to Divide: Division Facts	10 days
Topic #5	Fluency Multiply and Divide within 100	7 days
Topic #6	Connect Area to Multiplication and Addition	8 days
Topic #7	Represent and Interpret Data	6 days
Topic #8	Use Strategies and Properties to Add and Subtract	11 days
Topic #9	Fluency Add and Subtract within 1,000	8 days
Topic #10	Multiply by Multiples of 10	5 days
Topic #11	Use Operations with Whole Numbers to Solve Problems	5 days
Topic #12	Understand Fractions as Numbers	9 days
Topic #13	Fraction Equivalence and Comparison	9 days
Topic #14	Solve Time, Capacity, and Mass Problems	10 days
Topic #15	Attributes of Two-Dimensional Shapes	5 days
Topic #16	Solve Perimeter Problems	9 days

Topic 1 Title	Understand Multiplication and Division of Whole Numbers	Approximate Pacing	15 days
STANDARDS			
NJSLS (Math)			
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 × 7.			
3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.			
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.			
3.OA.B.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)			
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:**	

SL.3.1.d- explain their own ideas and understanding in light of the discussion *Example: In lesson 1-1, students share and explain the strategy they used to determine who bought more jars of paint and how many more. Students will compare and contrast others strategies students have used.* RL.3.10. By the end of the year, read and comprehend literature, including stories, dramas, and poems at grade level text-complexity or above, with scaffolding as needed. *Example: In topic 1, students will read various multi-step word problems, involving mathematical vocabulary, and determine which strategy would work best to find the solution.*	Data can be organized, displayed, and presented to highlight relationships. 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. *Example: In lesson 1-3, students will use a chart to collect and record the number of rows of cards, number of cards in each row, and the total number of cards. Students discuss the patterns they notice about the number of rows of cards, the number of cards in each row, and the total number of cards.*

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 lesson 1-5, students determine how much money Bella has after spending and earning money. Students want to think about the amount of money they start with, how much an item is, determine if they have enough, and determine how much would be left over.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- use repeated addition to show the relationship between multiplication and addition.
- use number lines to join equal groups.
- use arrays and properties to understand multiplication.
- use sharing to separate equal groups and to think about division.
- use repeated subtraction to show the relationship between division and subtraction.

How can thinking about equal groups help you understand the connection between multiplication and division?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: equal groups multiplication factors product equations unknown number line arrays rows columns Commutative Property of Multiplication division	***Students will be able to:*** Use equal groups to reinforce the connection between addition and multiplication. Use arrays, for special cases of equal groups, to find the total number using rows and columns. Understand division situations that involve sharing are also equal groups. Understand division is also used to solve problems in which there is an unknown.

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 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	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

grade level standards; given 2-3 X per year)	
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 2 Title	Multiplication Facts: Use Patterns	Approximate Pacing	7 days
STANDARDS			
NJSLS (Math)			
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 × 7.			
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.			
3.OA.B.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)			
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.			
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:**	

RL.3.10. By the end of the year, read and comprehend literature, including stories, dramas, and poems at grade level text-complexity or above, with scaffolding as needed. *Example: In topic 2, students read and solve word problems with multi steps by determining the most efficient strategy.* NJSLSA.L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. *Example: In lesson 2-3, students use conventions of standard English when writing their explanation on the solve and share.*	8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development. *Example: In topic 2, students will recognize and use patterns while multiplying to build automaticity and recall facts more efficiently.*
CLKS:	
8.2.5.C.4 Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models. *Example: During topic 2's solve and share, students solve a problem involving multisteps by determining the most efficient strategy they could use for their solution.*	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
Students will be able to: ● gain fluency in multiplication when using 2 and 5 as factors. ● gain fluency in multiplication when using 9 as a factor. ● gain fluency in multiplication when multiplying by 0 or 1. ● gain fluency in multiplication when multiplying by 10. ● number relationships and patterns to develop reasoning strategies to support their recall of the basic multiplication facts.	
How can I use what I know about equal groups to help multiply numbers?	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: multiples Identity (one) Property of Multiplication Zero Property of Multiplication	***Students will be able to:*** Use doubling or skip counting to generate the 2's facts. Use skip counting and patterns to solve 5's, 9's, and 10's facts. Understand when you multiply a number by 1 the product is that number. Understand when you multiply a number by 0 the product is 0.

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 *perform* 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 3 Title	Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8	Approximate Pacing	7 days

STANDARDS

NJSLS (Math)

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.B.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

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:
L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. *Example: In lesson 3-5, students need to follow conventions of English to clearly communicate the strategy they used to solve for multiplication number stories.*	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 topic 3, students will use the distributive property to solve problems involving multiplication.*

CLKS:
There are specific steps associated with creating a budget. 9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions. Saving money can impact an individual's ability to address emergencies and accomplish their short-and long-term goals. 9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate). *Example-In lesson 3-4, students solve a problem involving a clothing sale and what items they can purchase based on the amount of money they have.*
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS
Students will be able to: ● use the Distributive Property to solve problems involving multiplication within 100. ● use the Distributive Property to break apart unknown facts with 3 or 4 as a factor. ● use the Distributive Property to break apart unknown facts with 6 or 7 as a factor. ● use the Distributive Property and known facts to break apart unknown facts with 8 as a factor. ● use strategies such as bar diagrams and arrays with known facts to solve multiplication problems. ● use the Associative Property of Multiplication to group factors when multiplying 3 factors.
How can you use known multiplication facts to solve unknown facts?

STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: Distributive Property Associative Property	***Students will be able to:*** Use the Distributive Property to find products by breaking down apart the product into the sum of two smaller multiplication facts they already know. Use the Associative Property of Multiplication to multiply with three or more factors.

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 *perform* 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 4 Title	Use Multiplication to Divide: Division Facts	Approximate Pacing	10 days

STANDARDS

NJSLS (Math)

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.B.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Interdisciplinary Connections:	CS & DT:
AASL.4.2.3 Maintain openness to new ideas by considering divergent opinions, changing opinions or conclusions when evidence supports the change, and seeking information about new ideas encountered through academic or personal experiences. *Example: In lesson 4-8's solve and share, students are to use a balance to create equations that have the same value of the expression 42\6. (there are multiple answers for this problem)*	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 4-5, students find and explain patterns for even and odd numbers by separating into groups.*

CLKS:

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

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

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

Example: In lesson 4-7, students use and share efficient strategies they know to solve multiplication and division problems. A project manager needs to value all team members and their unique contributions in order to solve a problem or achieve a goal.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- use multiplication facts to divide.
- use multiplication facts to find related division facts.
- use knowledge of even and odd numbers to identify multiplication patterns.
- use properties to understand division involving 0 and 1.
- use patterns and known facts to find unknown multiplication facts. Use multiplication facts to find related division facts.

• use multiplication and division facts to find unknown values in equations.
How can you use known multiplication facts to find unknown division facts? How are multiplication and division related?

STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: fact family dividend divisor quotient even odd	***Students will be able to:*** Understand the relationship between multiplication and division in equations without remainders. Understand the relationship between operations to generate fact families. Use multiplication and division to explain patterns associated with even and odd numbers. Understand when 0 is the divisor, the quotient is not defined. Understand when 0 is the dividend, the quotient is 0. Use models to solve equations with the unknown in any position.

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 *perform* 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	NWEA Math MAP Assessment (beginning, middle, and end of year), Grade 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16

grade level standards; given 2-3 X per year)	
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 5 Title	Fluently Multiply and Divide within 100	Approximate Pacing	7 days
STANDARDS			
NJSLS (Math)			
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 × 7.			
3.OA.A.2 . Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.			
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.			
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.			
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:
SL.3.1.d- explain their own ideas and understanding in light of the discussion *Example: In lesson 5-2's solve and share, students will explain the strategy they used to determine the answer to the division problem.*	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.

Students will listen to other strategies classmates used and compare and contrast those strategies to the end result.	*Example: In lesson 5-1, students use arithmetic patterns in the addition table or multiplication table to find an answer.*

CLKS:

Different types of jobs require different knowledge and skills.
9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.
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: When cooking you need to measure various amounts and double them using knowledge of whole numbers. Chefs have to be exact when baking. What specific training is needed?

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- use the multiplication table and the Distributive Property to find patterns in factors and products.
- use number sense and reasoning while practicing multiplication and division basic facts.
- use strategies such as skip counting and properties of operations to multiply.
- solve multiplication and division problems that involve different strategies and representations.
- use multiplication and division to write and solve real-world problems involving equal groups.

What are strategies to solve multiplication and division facts?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: double bar diagram column row quotient factor dividend	***Students will be able to:*** Use a multiplication table to help students see patterns. Use a bar diagram to show the relationship between quantities in a word problem. Write multiplication and division stories to match equations.

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 *perform* 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 6 Title	Connect Area to Multiplication	Approximate Pacing	8 days

STANDARDS

NJSLS (Math)

3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and nonstandard units).

3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = □ ÷ 3, 6 × 6 = ?.

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

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:
L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. *Example: In lesson 6-2, students use reasoning to explain how the areas of the two squares are alike and different.* 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	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. 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 6-6's solve and share, students use properties to find the area of the irregular shapes by breaking the shape into smaller parts.*

Example: While students are working on their capstone project and making the calculation for the amount of food needed they are working together to utilize land as farmers would. Students must determine the amount of space needed for each harvest.	

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 topic 6, students will estimate the area of squares. The skill of estimating could be used for landscapers/carpenters who need to estimate how much material they may need.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- use the unit squares to find the area of a shape.
- use unit squares to find the area of a figure.
- use standard units to measure the area of a shape.
- use unit squares and multiplication to find the areas of squares and rectangles.
- use areas of rectangles to model the Distributive Property of Multiplication.
- Use areas of rectangles to find the area of irregular shapes.

How does area connect to multiplication and addition?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: area unit square square unit estimate	***Students will be able to:*** Understand that the unit square is the number of squares needed to cover a region with no gaps or overlaps. Use standard units to find the areas of squares and rectangles. Use multiplication to find the area. Use the Distributive Property to find the area. Understand that they can decompose irregular rectilinear figures and add the values together to find the area.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 6 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 7 Title	Represent and Interpreting Data	Approximate Pacing	6 days

STANDARDS

NJSLS (Math)

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

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:
3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. *Example: Collect and represent data in scaled bar graphs overtime to determine patterns of length of a day with correlation to seasonal changes.*	Data can be organized, displayed, and presented to highlight relationships. 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. *Example: Students will determine how to record collected data through picture graphs and/or bar graphs.*

CLKS:

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
Example: In topic 7, students use graphs and other tools to solve word problems involving data.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- use graphs to compare and interpret data.
- use frequency tables and picture graphs to compare and interpret data.
- use scaled bar graphs to represent data sets.
- use graphs to solve problems.

How can data be represented, analyzed, and interpreted?

STUDENT LEARNING OBJECTIVES

Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: data scaled picture graph scale scaled bar graph key frequency table survey	***Students will be able to:*** Read and understand scaled picture and bar graphs. Multiplication can be used when a picture or interval represents more than one. Make scaled picture and bar graphs using a frequency table and determining appropriate intervals. Answer two-steps questions regarding “how many more” and “how many less” using scaled graphs.

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 *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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 8 Title	Use Strategies and Properties to Add and Subtract	Approximate Pacing	11 days

STANDARDS
NJSLS (Math)
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.A.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
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:
3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. *Example: Students are shown graphs of population increases/decreases of various species in the Everglades to construct an explanation.*	8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development. *Example: In lesson 8-1, students use associative property, commutative property, or identify properties to solve for problems.*

CLKS:
9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2). *Example: While students are working on their capstone project and making the calculation for the amount of food needed they are working together to utilize land as farmers would. In farming, many math skills are needed: fractions (¼ of the land is corn, ½ is wheat, ¼ is lettuce), multiplication and division for planting crops and amount of produce needed or wanted to produce, measurement (land vs. plants needs for growth), and addition and subtraction.*
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS
Students will be able to: ● solve real-world problems using properties of addition. ● identify patterns in the addition table and explain them using algebraic thinking. ● use mental math to add. ● use mental math to subtract. ● use place value and a number line to round numbers. ● use rounding or compatible numbers to estimate a sum. ● use rounding or compatible numbers to estimate a difference.
How can sums and differences be estimated and found mentally?

STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: Associative (Grouping) Property of Addition Commutative (Order) Property of Addition Identity (Zero) Property of Addition open number line inverse operations round place value compatible numbers	***Students will be able to:*** Identify patterns in addition tables. Use properties to explain patterns of addition. Use adding on and make a ten to find sums using mental math. Use a number line to count back or count up to calculate easier. Use estimate to determine if answer is reasonable.

ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 8 Online Assessment, Cumulative 1-8 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 9 Title	Multi-Digit Operations	Approximate Pacing	8 days

STANDARDS

NJSLS (Math)

3.OA.C.7 Multiply and divide within 100. 7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.8 Solve problems involving the four operations, and identify and explain patterns in arithmetic. 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

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:
L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. *Example: In lesson 9-7, students use reasoning to justify a mathematical conjecture.*	8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development. *Example: In lesson 9-1, students use place value to break apart and add numbers.*

CLKS:

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.
Example: In lesson 9-6, students are to determine how many more text messages Rick can receive this month based off of how many he is able to receive a month and how much he already has used.

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.).
In topic 9's 3-ACT math task, students will estimate and determine how much money the third grade needs to raise for the "fun raiser".

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- Add two 3-digit numbers by breaking apart problems into simpler problems.
- Use regrouping to add 3-digit numbers.
- Add three or more numbers using addition strategies.
- Subtract multi-digit numbers using the expanded algorithm.
- Use regrouping to subtract 3-digit numbers.
- Use strategies to add 3 digit numbers and subtract a 3 digit number from another with one or more zeros.

How can you apply mental math to solve number stories and complex equations?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: regroup conjecture inverse operations Associative Property of Addition Commutative Property of Addition	***Students will be able to:*** Use the partial sums strategy to find the final sum. Use place value models to develop an understanding of regrouping. Use partial sums or column addition to find the sum of three or more addends. Use partial differences strategy. Draw and use place value models to develop understanding of regrouping. Understand the relationship between addition and subtraction to solve equations.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 9 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 10 Title	Multiply by Multiples of 10	Approximate Pacing	5 days

STANDARDS
NJSLS (Math)
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.B.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)
3.OA.D.8 Solve problems involving the four operations, and identify and explain patterns in arithmetic. 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
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:
3-LS2-1 Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. *Example: Groups are formed of large quantities of animals. Students will analyze the populations to determine any multiples of ten.*	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.*Example: students use various platforms to practice their math skills during math workshop and communicate with each other*

	(Quick Checks, Google Practice Sets, Flipgrid, Google Sides, Google Classroom, Prodigy etc)

CLKS:

You can give back in areas that matter to you.
9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
Example: Students will find ways to gather donations and give back to the local food bank. Students will calculate the amount of donations to the food bank from 'Seeds to Salad' using extension facts.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- Use patterns to find products when one factor is multiple of 10.
- Use different strategies to find products when one factor is a multiple of 10.
- Use the properties of multiplication to find products when one factor is a multiple of 10.

What strategies can be used for multiplying by multiples of 10?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: quantities open number line expressions decompose	***Students will be able to:*** Use place value blocks to discern patterns when multiplying by 10. Use basic multiplication facts to mentally solve then multiply by 10. Use the properties of multiplication (Associative and Distributive) to solve.

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 *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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 11 Title	Use Operations with Whole Numbers to Solve Problems	Approximate Pacing	5 days

STANDARDS

NJSLS (Math)

3.NBT.A.2 Use place value understanding and properties of operations to perform multi-digit arithmetic. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction

3.OA.C.7 Multiply and divide within 100. 7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.8 Solve problems involving the four operations, and identify and explain patterns in arithmetic. 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding

3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

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:
3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. *Example: In lesson 11-3's solve and share, students will solve 2 step word problems related to clownfish survival.*	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. *Example: In lesson 11-3's solve and share, students use a scaled picture graph to show how many clownfish are in the tank.*

CLKS:

There are specific steps associated with creating a budget.
9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.
Saving money can impact an individual's ability to address emergencies and accomplish their short-and long-term goals.
9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).
Example: In lesson 11-1, students solve word problems involving spending and saving money.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able:

- Draw diagrams and write equations to solve new two-step word problems involving addition and subtraction of whole numbers
- Draw diagrams and write equations to solve two-step word problems involving multiplication and division of whole numbers.
- Examine relationships between quantities in a two-step word problem by writing equations. Choose and apply the operations needed to find the answer.

What are ways to solve 2-step problems?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: fewer operations quantity dividend divisor	***Students will be able to:*** Use algebraic language, using a letter, to represent unknown quantities. Use bar models to represent the relationships in problems. Use estimation strategies (rounding and compatible numbers) to check that the answer is reasonable.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 11 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 12 Title	Understand Fractions as Numbers	Approximate Pacing	9 days

STANDARDS
NJSLS (Math)
3.MD.B.4 Represent and interpret data. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
3.NF.A.1 Develop understanding of fractions as numbers. 1. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NF.A.2a Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
3.NF.A.2b Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
3.NF.A.3c . Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.
3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.
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:
3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

Example: The capstone project for 3rd grade is "Seeds to Salad', where students grow and cultivate food for a luncheon celebration. Leftover food is donated to a local food pantry. Students calculate the amount of food needed/grown in order to support their "population". They discuss how plants grow and the area they need for growth by measuring the distance needed in between plants.	*Example: In lesson 12-2, students determine there are multiple ways to divide wholes into equal-sized parts and discuss the reasoning for choosing how they represented their portion.*

CLKS:

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
Example: While students are working on their capstone project and making the calculation for the amount of food needed they are working together to utilize land as farmers would. In farming, many math skills are needed: fractions (¼ of the land is corn, ½ is wheat, ¼ is lettuce), multiplication and division for planting crops and amount of produce needed or wanted to produce, measurement (land vs. plants needs for growth), and addition and subtraction.

You can give back in areas that matter to you.
9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
Example: Students will find ways to gather donations and give back to the local food bank. Students will calculate the amount of donations to the food bank from 'Seeds to Salad' using extension facts.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- Understand how to read and write unit fractions for equal-sized parts of a region.
- Use a fraction to represent multiple copies of a unit fraction.
- Determine and draw the whole (unit) given one part (unit fraction).
- Represent fractions less than 1 on a number line.
- Represent fractions greater than 1 on a number line.
- Measure length to the nearest half inch and show the data on a line plot.
- Measure length to the nearest fourth inch and show the data on a line plot.

What are different interpretations of a fraction?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: fraction numerator	***Students will be able to:*** Use fractions to describe equal parts of a region. Use a number line to represent a fraction using a point.

line plot nearest fourth inch unit fraction denominator nearest half inch	Use a ruler to measure the length of an item to the nearest half or fourth inch.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 12 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	

Modifications for Learners
See appendix

Topic 13 Title	Fraction Equivalence and Comparison	Approximate Pacing	9 days

STANDARDS

NJSLS (Math)

3.NF.A.3a . Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

3.NF.A.3b Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

3.NF.A.3d Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

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:
L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. *Example: In lesson 13-2, students need to follow conventions of English to clearly communicate how they found equivalent fractions using a number line.*	8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate. *Example: In lesson 13-1, students determine there are multiple ways to divide wholes into equal-sized parts and discuss the reasoning for choosing how they represented their portion.*

CLKS:

9.2.5.CAP.7: Identify factors to consider before starting a business.
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 12-2, students must use fractions to represent a garden made in the shape of a rectangle and divided into 4 equal parts, 3 parts being flowers. Students discuss what types of jobs may use fractional measurements.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- Find equivalent fractions that name the same part of the whole.
- Represent equivalent fractions on the number line.
- Use models such as fraction strips to compare fractions that refer to the same whole and have the same denominator.
- Use models such as fraction strips to compare fractions that refer to the whole and have the same numerator.
- Use benchmark numbers to compare fractions.
- Use the number line to compare fractions.
- Use fraction names to represent whole numbers.

What are different ways to compare fractions?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: equivalent fractions benchmark fractions unit fractions greater than (>) less than (<)	***Students will be able to:*** Understand that fractions that name the same part of a whole are equivalent. Understand equivalent fractions can be represented on a number line. Write multiple equivalent fractions. Use fraction tiles to help compare the numerators when the wholes are the same. Use fraction tiles to help compare the denominators when the wholes are the same. Use benchmark fractions to determine if a fraction is closer to 0, ½, or 1. Use a number line to compare fractions.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 13 Online Assessment
Formative Assessments (Ongoing assessments during	Quick Checks, Independent Practice page in journal, anecdotal notes

the learning period to inform instruction)	
Alternative Assessments (Any learning activity or assessment that asks students to *perform* 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic Title 14	Solve Time, Capacity, and Mass Problems	Approximate Pacing	10 days

STANDARDS
NJSLS (Math)
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. *Excludes multiplicative comparison problems (problems involving notions of "times as much").
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:
SL.3.1.d- explain their own ideas and understanding in light of the discussion *Example: In lesson 14-4's solve and share, students will explain the strategy they used to determine the estimate of liquid volume as well as explain what prior knowledge they used to make the estimate. Students will listen to other strategies classmates used and compare and contrast those strategies to the end result.*	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. *Example: Students use various websites and platforms to practice their math skills and communicate their learning daily.*

CLKS:	
9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. *Example: Students discuss how digital clocks can help someone identify time to the minute. Phones now have access to world clocks to show the time in other areas.*	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
Students will be able to: ● Show and tell time to the nearest minutes using analog and digital clocks. ● Tell and write time to the nearest minute and measure time intervals in minutes. ● Solve word problems involving addition and subtraction to measure quantities of time. ● Use standard units to estimate liquid volume. ● Use standard units to measure liquid volume. ● Use standard units to estimate the masses of solid objects. ● Use a pan balance with metric weights to measure the mass of objects in grams and kilograms. ● Use pictures to help solve problems about mass and volume.	
How can time, capacity, and mass be measured and found?	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: A.M. P.M. elapsed time time interval capacity (liquid volume) Liter (L) Mass Gram (g) Kilogram (kg)	***Students will be able to:*** Tell time on an analog clock to the nearest minute. Use counting up as a strategy to find elapsed time in hours and minutes. Estimate and measure liquid volume (capacity) in liters (L). Choose appropriate units and tools to estimate and measure mass in grams (g) and kilograms (kg).
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 *perform* 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 15 Title	Attributes of Two-Dimensional Shapes	Approximate Pacing	5 days

STANDARDS
NJSLS (Math)
3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
3.NF.A.1 Develop understanding of fractions as numbers. 1. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.
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:
1.3.5.D.2 Identify common and distinctive characteristics of artworks from diverse cultural and historical eras of visual art using age-appropriate stylistic terminology (e.g., cubist, surreal, optic, impressionistic), and experiment with various compositional approaches influenced by these styles. *Example: In art class, students will be creating various artworks using 2-D and 3-D geometric shapes*	8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data. *Example: In lesson 15-3, students sort and classify shapes into groups based on attributes.*

CLKS:
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).
In lesson 15-2, students sort and classify shapes into groups based on how they are alike and how they are different. Students share their groupings.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Students will be able to:

- Identify quadrilaterals and use attributes to describe them.
- Classify shapes according to their attributes.
- Analyze and compare quadrilaterals and group them by their attributes.

How can two-dimensional shapes be described, analyzed, and classified?

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: polygon side quadrilateral angle concave vertex trapezoid parallelogram rectangle right angles rhombus square convex	***Students will be able to:*** Recognize that shapes in different categories may share attributes that place them in a larger or smaller category. Identify common attributes within groups of shapes. Analyze and compare quadrilaterals and group them by attributes.

ASSESSMENT OF LEARNING

Summative Assessment (Assessment at the end of the learning period)	Topic 15 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 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 3 Readiness Assessment, Cumulative 1-8, Cumulative 1-16
RESOURCES	
Core instructional materials: Envision	
Supplemental materials: 3-ACT Math Tasks Number talks Hands-on Standards Leveled worksheets Additional Resources on Drive	
Modifications for Learners	
See appendix	

Topic 16 Title	Solve Perimeter Problems	Approximate Pacing	9 days
STANDARDS			
NJSLS (Math)			
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.			
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3			
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.			
3.MD.C.7 Relate area to the operations of multiplication and addition. **a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.** **b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.** **c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b+c is the sum of a×b and a×c. Use area models to represent the distributive property in mathematical reasoning.** **d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.**			
3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.			
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:**
SL.3.1.d- explain their own ideas and understanding in light of the discussion *Example: In lesson 16-3, students share and explain the strategy they used to determine the unknown side length in a perimeter problem. Students will compare and contrast others strategies students have used.*	8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development. *Example: In topic 16, students will recognize that shapes can have the same area but different perimeters and use patterns while exploring all the different shapes that can have the same area.*
CLKS:	
8.2.5.C.4 Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models. *Example: During topic 16's solve and share, students solve a problem involving finding shapes with the same perimeter but different areas or the same area but different perimeters through the use of sketching on graph paper.*	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	
Students will be able: ● Find the perimeter of different polygons. ● Find the perimeter of different polygons with common shapes. ● Use the given sides of a polygon and the known perimeter to find the unknown side length. ● Understand the relationship of shapes with the same perimeter and different areas. ● Understand the relationship of shapes with the same area and different perimeters.	
How can perimeter be measured and found?	
STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**
Students will know: perimeter area square units equilateral triangle	***Students will be able to:*** Recognize that the perimeter of a polygon is the distance around the figure. Use what they know about addition and multiplication to determine different methods to find the perimeter of equilateral triangles, squares, rectangles, and other polygons. Find an unknown side length when given the perimeter and remaining side lengths.

	Create or describe rectangles that have equal perimeters and compare their areas. Create or describe rectangles that have equal area and compare their perimeters.
ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Topic 16 Online Assessment, Cumulative 1-16 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 demonstrate their knowledge, understanding and proficiency)	Leveled worksheets/activities, PBL (extensions), modified assessments as per IEP
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See appendix