Grade 5 Math Curriculum

Content Area: **Mathematics**
Course(s): **Grade 5 Mathematics**
Time Period: **Full Year**
Length: **School Year**
Status: **Published**

Revised August 2024

Grade 5 Mathematics

Required: Full Year

Samsel Upper Elementary School

Course Overview

Summary of the Course: Learning mathematics is a developing process in which work in the intermediate grades provides the building blocks for future success in math. Students will continue to build upon their prior knowledge of whole numbers and decimals, fractions, data analysis, pre-algebra, and basic geometry. The students will engage in relevant activities that will utilize their reasoning and critical thinking strategies as they apply them in problem solving both individually and working cooperatively with others. In grade five, students will master basic computation skills with whole numbers and decimals, build upon the concept of equivalencies among numbers, and understand fractions as part of a whole.

The goal of fifth grade mathematics is to engage the learner and spark an interest in mathematics that will carry through to higher grade levels. This can be achieved by using a variety of techniques including hands-on activities, projects, cooperative problem-solving and games. It is important for learners at this level to see the relevancy of mathematics to everyday life and teaching strategies should make this connection as often as possible.

Students at this level are emerging as independent thinkers and problem-solvers and should be given the opportunity to express their opinions and alternate solutions through modeling. Learners should also be provided with various opportunities to investigate algebraic ideas. If students are exposed to the practicality of math in everyday life through a variety of teaching strategies, it is the hope of the educator to build a sound foundation and a propensity toward mathematics.

In order to demonstrate a cohesive and complete implementation plan the following general suggestions are provided:

- The use of various formative assessments are encouraged in order to provide an ongoing method of determining the current level of understanding the students have of the material presented.
- Homework, when assigned should be relevant and reflective of the current teaching taking place in the classroom.
- Organizational strategies should be in place that allow the students the ability to take the information gained in the classroom and put in in terms that are relevant to them.
- Instruction should be differentiated to allow students the best opportunity to learn.
- Assessments should be varied and assess topics of instruction delivered in class.
- Modifications to the curriculum should be included that address students with Individualized Educational Plans (IEP), English Language Learners (ELL), and those requiring other modifications (504 plans)

Table of Contents

Unit 1-Place Value

Content Area: **Mathematics**
Course(s): **Grade 5 Mathematics**
Time Period: **1st Trimester**
Length: **7 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students gain understanding of the place value system by learning to read, write, interpret, round, and compare whole numbers and decimals. This unit is based on standard 5.NBT.A

Enduring Understandings

- Our number system is organized into periods, or groups of three place values.
- Place value can be used to compare and order whole numbers and decimals.
- Each place value is 10 times as great as the place value immediately to its right and 1/10 as great as the place value immediately to its left.

Essential Questions

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

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 1-1: Patterns with Exponents and Powers of 10	1 day	Use patterns and the properties of multiplication to calculate a product when multiplying by a product of 10; use whole-number exponents to write powers of 10.	**Problem-Based Learning** Solve and Share – *Use tools such as place-value blocks to activate prior knowledge of patterns to multiply by powers of 10.* **Visual Learning** Visual Learning Bridge- *How can you explain patterns in the number of zeros in a product?*	Quick Check 1-1 Lesson 1-1 Online Quiz	5.NBT.A.2 **Mathematical Practices** MATH.K-12.4 MATH.K-12.5 MATH.K-12.7

			Convince Me! - Construct an Argument: Notice that the number of zeros in each product is the same as the exponent and that the number of zeros in the product increases by 1 each time. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activity:** Students create a chart breaking down a number by place value, which will allow students to write the number in expanded form **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 1-2: Understand Whole Number Place Value	1 day	Read and write whole numbers using standard form, expanded form, and number names.	**Problem-Based Learning** Solve and Share – *Build understanding of place value and the relationship between two values.* **Visual Learning** Visual Learning Bridge- *How are place-value positions related?* Convince Me! - *Construct an*	Quick Check 1-2 Lesson 1-2 Online Quiz	5.NBT.A.1 **Mathematical Practices** MATH.K-12.3 MATH.K-12.7

			Argument: Use reasoning and place-value relationships to construct and argument explaining whether a suggested relationship between two values is correct. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 1-3: Decimals to Thousandths	1 day	Represent decimals to the thousandths as fractions and fractions with denominators of 1,000 as decimals.	**Problem-Based Learning** Solve and Share - *Activate prior knowledge of powers of 10, whole number place value, and fractions to find the missing fractions.* **Visual Learning** Visual Learning Bridge- *How can you read and write decimals to the thousandths?* Convince Me! - *Construct an Argument: Use reasoning and place-value relationships to construct and argument explaining whether a suggested relationship between two values is correct.* **Guided Practice** **Differentiated**	Quick Check 1-3 Lesson 1-3 Online Quiz	5.NBT.A.1 5.NBT.A.3.a **Mathematical Practices** MATH.K-12.3 MATH.K-12.3 MATH.K-12.7

			Instruction/Centers: **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 1-4: Understand Decimal Place Value	1 day	Read and write numbers with decimals through thousandths using standard form, expanded form, and number names; identify equivalent decimals.	**Problem-Based Learning** Solve and Share - *Activate prior knowledge of decimals to explain a time written as a decimal.* **Visual Learning** Visual Learning Bridge- *How can you represent decimals?* Convince Me! – *Use Structure: Use the structure of the place-value system to recognize that the pattern of each place value being 10 times as great as the value of the place to its right extends to decimal numbers.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Lead:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy	Quick Check 1-4 Lesson 1-4 Online Quiz	5.NBT.A.3.a **Mathematical Practices** MATH.K-12.6 MATH.K-12.7 MATH.K-12.8

			(PearsonRealize.com) **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Provide students with Base 10 blocks to model each decimal place. Students use 10-by-10 grids on graph paper to model decimal places **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 1-5: Compare Decimals	1 day	Use place value to compare decimals through thousandths.	**Problem-Based Learning** Solve and Share - *Activate prior knowledge of the decimal place value system to compare decimals.* **Visual Learning** Visual Learning Bridge- *How can you compare decimals?* Convince Me! – *Critique Reasoning: Use decimal place value to critique the reasoning of an answer and then provide an explanation to support the reasoning.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy	Quick Check 1-5 Lesson 1-5 Online Quiz	5.NBT.A.3.b **Mathematical Practices** MATH.K-12.3 MATH.K-12.6

			(PearsonRealize.com) **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Divide students into groups and give each group cards with a variety of whole numbers and decimals. Students will order the numbers from least to greatest and line up accordingly. The first group to line up correctly wins. Students will create a number line to compare the values of various decimals. Use measuring cups to show students sizes and order of common fractions (with decimal equivalents.) Write two fractions on the board. Students copy problem, compare and order fractions, and hold up their answer. Comparison Game: Split students into groups of 4. Distribute fraction cards. The first group to order fractions from least to greatest correctly wins. **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 1-6: Round Decimals	1 day	Use place value to round decimals to different places.	**Problem-Based Learning** Solve and Share - Use *prior knowledge of decimals to determine if decimals are closer to 12 or 13.* **Visual Learning** Visual Learning Bridge- *How can you round decimals?* Convince Me! – *Critique*	Quick Check 1-6 Lesson 1-6 Online Quiz	5.NBT.A.4 **Mathematical Practices**

			Reasoning: Represent numbers in a number line to determine reasonableness of a solution. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** On the board or overhead, use a number line to illustrate why a number would round to a certain place. Explain and model rounding rules while demonstrating examples on the board or overhead. Given a number, students will correctly round to a specific place in notebook or use Communicators. **Closure** Lesson Self-Assessment: *PearsonRealize.com*		MATH.K-12.1 MATH.K-12.3 MATH.K-12.7
Lesson 1-7: Problem Solving: Look for and Use Structure	1 day	Use the structure of the decimal place-value system to solve problems involving patterns.	**Problem-Based Learning** Solve and Share - Use *prior knowledge of the decimal place value system to order decimals from least to greatest.* **Visual Learning**	Quick Check 1-7 Lesson 1-7 Online Quiz	5.NBT.A.3.a 5.NBT.A.3.b

			Visual Learning Bridge- *How can you use structure to solve problems?* Convince Me! – *Use Structure: Use the structure of the decimal place- value system to find additional numbers to complete a chart.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		**Mathematical Practices** MATH.K-12.6 MATH.K-12.7 MATH.K-12.8

MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics
MATH.K-12.5	Use appropriate tools strategically
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.
MATH.K-12.6	Attend to precision
MATH.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.
MATH.K-12.7	Look for and make use of structure

MATH.5.NBT.A.3.a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).
MATH.5.NBT.A.3.b	Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.5.NBT.A.4	Use place value understanding to round decimals to any place.

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.

http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- If students have a strong understanding of place value through the billions, challenge them to extend the place-value chart and to write numbers in the trillions, quadrillions and quintillions.
- Have pairs of students play a mystery number game. Have each partner write a write a series of clues describing a number (including decimals). Example, the digits in the ten-thousandths place is half the value of the digit in the hundreds place. Swap clues and try to correctly name one another's numbers.
- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review
- Model various numbers on a hundredths grid or use base ten blocks to demonstrate decimal place value.
- To reinforce place-value meaning and understanding have students participate in teacher made hands-on center or whole group activities such as place value concentration. Students match the place-value name to the corresponding number.
- Write up to a 7-digit number on index cards. Provide each student with one card. Have the students read the number on their card aloud and then students should line up in order of their cards from least to greatest.

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)

- Game Center (Envision 2020)

- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity-Topic 1
    - All About Manatees
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2,
    - Playing with Blocks
        - Science and Engineering: 3-5-ETS1-1
    - Planetary Distances
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4

- Envision Stem Project Theme: Pollinating Insects: Use the internet and other sources to find out more about pollinating insects in the United States. Standard: 5-LS2-1; 8.1.5.A.1, 8.1.5.A.2

- Problem Solving Reading Activity
    - RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (3-5-ETS1-2) RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (3-5- ETS1-2) RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (3-5-ETS1-2) W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (3-5-ETS1-1), (3-5-ETS1-3) W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work and provide a list of sources. (3-5-ETS1-1), (3-5-ETS1-3) W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (3-5-ETS1-1), (3-5-ETS1-3)

Unit 2-Add, Subtract, Multiply and Divide Whole Numbers and Decimals

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **1st Trimester**
Length: **37 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students develop an understanding of addition, subtraction, multiplication and division of whole numbers and decimals using models and strategies, while applying their understanding of decimal place value. Students learn to estimate and compute sums, differences, products and quotients. This unit is based on standard 5.NBT.B

Enduring Understandings

- There's more than one way to solve mental calculations and to estimate.
- Adding and subtracting multi-digit decimals is similar to adding and subtracting multi-digit whole numbers.
- Multiplying and dividing multi-digit decimals is similar to multiplying and dividing multi-digit whole numbers.
- Place value blocks and models can be used to add and subtract decimals.
- Division and multiplication problems involving multiples of 10 can be solved using basic facts and patterns.
- Area models and properties are two ways to find quotients with multi-digit whole numbers.

Essential Questions

- How can sums, differences, products and quotients be estimated?
- What are some common procedures for adding and subtracting whole numbers and decimals?
- What are some common procedures and the standard procedures for multiplying and dividing whole numbers and decimals?
- How can sums and differences be found mentally?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/	Suggested	General	Instructional Activities	Suggested	NJSLS

Selection	Timeline per topic	Objectives		Benchmarks/ Assessments	
Lesson 2-1: Mental Math	1 day	Use properties of addition and strategies to solve problems mentally.	**Problem-Based Learning** Solve and Share – *Use communicative and associate properties of addition to solve problems involving three addends to extend the understanding of addition.* **Visual Learning** Visual Learning Bridge- *How can you use mental math to add?* Convince Me! -*Reason Quantitatively: Use mental math to find the sum and provide an explanation to justify the answer.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment:	Quick Check 2-1 Lesson 2-1 Online Quiz	5.NBT.B.7 5.NBT.A.4 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3

			PearsonRealize.com		
Lesson 2-2: Estimate Sums and Differences of Decimals	1 day	Use rounding or compatible numbers to estimate sums and differences.	**Problem-Based Learning** Solve and Share – *Use prior knowledge of rounding and compatible numbers to estimate sums of whole numbers.* **Visual Learning** Visual Learning Bridge- *How can you estimate sums?* Convince Me! - *Critique Reasoning: Determine if the estimate is reasonable.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*	Quick Check 2-2 Lesson 2-2 Online Quiz	5.NBT.B.7 5.NBT.A.4 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3
Lesson 2-3:	1 day	Model sums and differences of	**Problem-Based Learning** Solve and Share – *Use a*	Quick Check 2-3	5.NBT.B.7

Use Models to Add and Subtract Decimals		decimals.	*tool to find the sum of two decimal numbers.* **Visual Learning** Visual Learning Bridge- *How can you use models to add decimals?* Convince Me! - C*ritique Reasoning: Explain why an answer does not make sense.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*	Lesson 2-3 Online Quiz	**Mathematical Practices** MATH.K-12.1 MATH.K-12.3
Lesson 2-4: Use Strategies to Add Decimals	1 day	Add decimals to the hundredths using partial sums.	**Problem-Based Learning** Solve and Share – *Solve a problem by adding two decimal numbers.* **Visual Learning** Visual Learning Bridge-	Quick Check 2-4 Lesson 2-4 Online Quiz	5.NBT.B.7 **Mathematical Practices**

			How can you add decimals? Convince Me! - C*ritique Reasoning: Determine if an answer is reasonable and explain errors.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy*. Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		MATH.K-12.3 MATH.K-12.8
Lesson 2-5: Using Strategies to Subtract Decimals	1 day	Subtract decimals to the hundredths using familiar strategies, such as partial differences. .	**Problem-Based Learning** Solve and Share – *Solve a problem by subtracting two decimal numbers.* **Visual Learning** Visual Learning Bridge- *How can you subtract decimals?* Convince Me! - Be Precise: *Explain how the strategies*	Quick Check 2-5 Lesson 2-5 Online Quiz	5.NBT.B.7 Mathematical Practices MATH.K-12.1 MATH.K-12.5 MATH.K-12.7

			used when subtracting decimals relate to the place values of the digits. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 2-6: Problem Solving: Look for a Pattern	1 day	Look for patterns with decimal-number sets in order to solve problems	**Problem-Based Learning** Solve and Share – *Use bar diagram to solve a multi-step problem involving addition and subtraction of money.* **Visual Learning** Visual Learning Bridge- *How can you represent a problem with bar diagrams?* Convince Me! - *Model with Math: Translate a problem situation into mathematics*	Quick Check 2-6 Lesson 2-6 Online Quiz	5.NBT.3 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3

			and decide if an estimated or calculated answer is reasonable. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment: *PearsonRealize.com*		
Lesson 3-1: Multiply Greater Numbers by Powers of 10	1 day	Use place- value understandings and patterns to mentally multiply whole numbers and powers of 10.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of place value to find products of whole numbers and powers of 10 using patterns and mental math.* **Visual Learning** Visual Learning Bridge- *How can you use patterns and mental math to multiply a whole number by a power of 10.* Convince Me! - C*ritique*	Quick Check 3-1 Lesson 3-1 Online Quiz	5.NBT.A.2 5.NBT.A.1 **Mathematical Practices** MATH.K-12.3 MATH.K-12.5

			Reasoning: Determine which answer is reasonable and explain. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Students define product and factor; discuss meaning and examples. Have students hold large number cards in front of room displaying a basic fact; add zeros to factors (one at a time) and then to product. Next students will work in pairs, creating their own problems. Their partner will then solve the problem. **Closure** Lesson Self-Assessment *PearsonRealize.com*		

Lesson 3-2: Estimate Products	1 day	Use rounding and compatible numbers to estimate products.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of rounding and compatible numbers to estimate a product.* **Visual Learning** Visual Learning Bridge- *How can you estimate products?* Convince Me! - C*ritique Reasoning: Analyze thinking used to estimate products.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 3-2 Lesson 3-2 Online Quiz	5.NBT.B.5 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3

			Optional Activities Rounding Rules Poem		
Lesson 3-3: Multiply by 1-Digist Numbers	1 day	Use place value and the standard algorithm to multiply multi-digit numbers by 1-digit numbers.	**Problem-Based Learning** Solve and Share – *Use any strategy to multiply a 2-digit number by a 1-digit number.* **Visual Learning** Visual Learning Bridge- *What is a common way to record multiplication?* Convince Me! - C*ritique Reasoning: Analyze a problem and determine the error.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment	Quick Check 3-3 Lesson 3-3 Online Quiz	5.NBT.B.5 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3 MATH.K-12.4

			PearsonRealize.com		
Lesson 3-4: Multiply 2-Digit by 2-Digit Numbers	1 day	Use the expanded and standard algorithm to multiply 2-didigt by 2-digit numbers. Estimate to check if products are reasonable.	**Problem-Based Learning** Solve and Share – *Use any strategy to solve a problem by multiplying two 2-digit numbers.* **Visual Learning** Visual Learning Bridge- *What is a common way to record multiplication?* Convince Me! - *Make Sense and Persevere: Use estimation to check for reasonableness of an answer.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 3-4 Lesson 3-4 Online Quiz	5.NBT.B.5 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3 MATH.K-12.4

Lesson 3-5: Multiply 3-Digit by 2-Digit Numbers	1 day	Multiply 3-digit by 2-digit numbers by adding partial products or by using the standard algorithm.	**Problem-Based Learning** Solve and Share – *Combine equal groups and add partial products to multiply a 3-digit number by a 2-digit number.* **Visual Learning** Visual Learning Bridge- *How do you multiply 3-digit numbers by 2-digit numbers?* Convince Me! - *Construct Arguments: Determine if an estimate is reasonable and justify thinking.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 3-5 Lesson 3-5 Online Quiz	5.NBT.B.5 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3

Lesson 3-6: Multiply Whole Numbers with Zeros	1 day	Use knowledge about place value and multiplying with 2-digit and 3-digit numbers to multiply with zeros.	**Problem-Based Learning** Solve and Share – *Use prior knowledge of multiplying a 3-digit number by a 2-digit number to problem solve.* **Visual Learning** Visual Learning Bridge- *How can you multiply with zeros?* Convince Me! -*Model with Math: Write an equation to demonstrate a reasonable estimate of a product.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 3-6 Lesson 3-6 Online Quiz	5.NBT.B.5 **Mathematical Practices** MATH.K-12.1 MATH.K-12.4 MATH.K-12.7
Lesson 3-7:	1 day	Use properties and the standard	**Problem-Based Learning** Solve and Share – *Use*	Quick Check 3-7	5.NBT.B.5

Practice Multiplying Multi-Digit Numbers		algorithm for multiplication to find the products of multi-digit numbers	*prior knowledge to multiply two different 3-digit numbers by the same 2-digit number.* **Visual Learning** Visual Learning Bridge- *How can you use multiplication to solve problems?* Convince Me! - *Be Precise: Explain why the process for multiplying is the same regardless of the number of digits in the factors.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 3-7 Online Quiz	**Mathematical Practices** MATH.K-12.2 MATH.K-12.4 MATH.K-12.6
Lesson 3-8:	1 day	Use models and strategies to solve	**Problem-Based Learning** Solve and Share – *Use*	Quick Check 3-8	5.NBT.B.5

Solve Word Problems Using Multiplication		word problems.	*prior knowledge of multiplying multi-digit numbers to write and solve an equation to solve a real-world word problem.* **Visual Learning** Visual Learning Bridge- *How can you use a bar diagram to solve a multiplication problem?* Convince Me! - *Construct Arguments: Explain how to use estimation to justify reasonableness.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 3-8 Online Quiz	**Mathematical Practices** MP.K-12.1 MATH.K-12.3 MATH.K-12.4
Lesson 3-9:	1 day	Critique the reasoning of	**Problem-Based Learning** Solve and Share – *Use*	Quick Check 3-9	5.NBT.B.5

Problem Solving: Critique Reasoning		others by asking questions, looking for flaws, and using prior knowledge of estimating products.	*prior knowledge of multiplication and estimation to critique the reasoning of others.* **Visual Learning** Visual Learning Bridge- *How can you critique the reasoning of others?* Convince Me! - *Critique Reasoning: Analyze the reasoning of others.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 3-9 Online Quiz	**Mathematical Practices** MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.6
Lesson 4-1: Multiply Decimals by Powers of 10	1 day	Use knowledge about place value and patterns to find the product of a decimal number	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of multiplying whole numbers by powers of 10 to multiply*	Quick Check 4-1	5.NBT.B.7 **Mathematical Practices**

		and a power of 10.	*decimals by powers of 10.* **Visual Learning** Visual Learning Bridge- *What patterns can help you multiply decimals by powers of 10?* Convince Me! - U*se Structure: Analyze answers entered in a chart to identify a pattern that can be used when multiplying numbers by powers of 10.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 4-1 Online Quiz	MATH.K-12.3 MATH.K-12.7
Lesson 4-2: Estimate the Product of a	1 day	Use rounding and compatible numbers to estimate the	**Problem-Based Learning** Solve and Share – *Use strategies to estimate the product of a whole number*	Quick Check 4-2	5.NBT.B.7

Decimal and a Whole Number		product of a decimal and a whole number.	*and a decimal.* **Visual Learning** Visual Learning Bridge- *What are some ways to estimate products of decimals and whole numbers?* Convince Me! - *Reasoning: Use two different ways to estimate a product and determine if the estimate is an overestimate or underestimate.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 4-2 Online Quiz	**Mathematical Practices** MATH.K-12.2 MATH.K-12.6 MATH.K-12.8
Lesson 4-3: Use Models to	1 day	Use models to represent multiplying a	**Problem-Based Learning** Solve and Share – *Use hundredths grids to model*	Quick Check 4-3	5.NBT.B.7

Multiply a Decimal and a Whole Number		decimal and a whole number.	*multiplying a whole number by a decimal.* **Visual Learning** Visual Learning Bridge- *How can you model multiplying a decimal by a whole number?* Convince Me! - *Make Sense and Persevere: Use place value blocks to develop understanding of multiplying a decimal by a whole number.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 4-3 Online Quiz	**Mathematical Practices** MATH.K-12.1 MATH.K-12.3

Lesson 4-4: Multiply a Decimal and a Whole Number	1 day	Use place-value understanding and an algorithm for multiplying whole numbers to multiply a decimal by a whole number.	**Problem-Based Learning** Solve and Share – *Use prior knowledge of multiplication of multi-digit numbers to multiply a distance that includes a decimal by whole numbers of minutes.* **Visual Learning** Visual Learning Bridge- *How do you multiply a decimal by a whole number?* Convince Me! - *Generalize: Use number sense to place the decimal point in the product.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment	Quick Check 4-4 Lesson 4-4 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.3 MATH.K-12.8

			PearsonRealize.com		
Lesson 4-5: Use Models to Multiply a Decimal and a Decimal	1 day	Use grids to model decimals and find the product of a decimal and a decimal.	**Problem-Based Learning** Solve and Share – *Use student prior knowledge of area to build understanding of the product of two decimals.* **Visual Learning** Visual Learning Bridge- *How can you model decimal multiplication?* Convince Me! - *Be Precise: Explain how to shade the hundredths grid to model decimal multiplication and find the product.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 4-5 Lesson 4-5 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.4 MATH.K-12.6 MATH.K-12.8

Lesson 4-6: Multiply Decimals Using Partial Products	1 day	Multiply decimals using partial products and models.	**Problem-Based Learning** Solve and Share – Solve a real-world word problem by multiplying two decimals using a decimal grid. **Visual Learning** Visual Learning Bridge- *How can you multiply decimals using partial products?* Convince Me! - *Make Sense and Persevere: Determine if the answer is reasonable by estimating.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Write a multiplication word problem on the board that deals with money. Review the procedure for the	Quick Check 4-6 Lesson 4-6 Online Quiz	5.NBT.B.7 **Mathematical Practice** MATH.K-12.1 MATH.K-12.5

			placement of decimal point the in product. Model multiplying a decimal by a whole number; then a decimal by a decimal. Students will solve relevant problems through role playing. Use play money as a visual representation. **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 4-7: Use Properties to Multiply Decimals	1 day	Use properties to multiply decimals.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of multiplying whole numbers and patterns to multiply two decimals.* **Visual Learning** Visual Learning Bridge- *How can you use properties to multiply decimals?* Convince Me! - *Use Structure: identify the properties of multiplication that can be used to prove student answer.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus:	Quick Check 4-7 Lesson 4-7 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.1 MATH.K-12.7

			PearsonRealize.com Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Students play "Property Bingo" with partner by matching equation and property card **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 4-8: Use Number Sense to Multiply Decimals	1 day	Use number sense and reasoning to place the decimal point in the product.	**Problem-Based Learning** Solve and Share – *Use number sense to place the decimal points in products.* **Visual Learning** Visual Learning Bridge- *How can you use number sense to multiply decimals?* Convince Me! -*Construct Arguments: Explain if the product should be less than or greater than the two factors.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:**	Quick Check 4-8 Lesson 4-8 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3 MATH.K-12.8

			Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 4-9: Problem Solving: Model with Math	1 day	Use previously learned concepts and skills to represent and solved problems.	**Problem-Based Learning** Solve and Share – *Use modeling to solve a multi-step word problem involving decimal multiplication.* **Visual Learning** Visual Learning Bridge- *How can you model a problem with an equation?* Convince Me! - *Model with Math: Explain the steps needed to find the answer to the problem and how the equation represents the problem.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:**	Quick Check 4-9 Lesson 4-9 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3 MATH.K-12.4 MATH.K-12.6

			Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-1: Use Patterns and Mental Math to Divide	1 day	Use place-value patterns and mental math to find quotients.	**Problem-Based Learning** Solve and Share – *Identify a pattern when dividing multiples of 10.* **Visual Learning** Visual Learning Bridge- *How can patterns help you divide multiples of 10?* Convince Me! - *Look for Relationships: Solve similar problems and identify relationships between the divisors, dividends, and quotients to help generalize a procedure for dividing powers of 10.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Lead:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:**	Quick Check 5-1 Lesson 5-1 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.6 MATH.K-12.7

			Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-2: Estimate Quotients with 2-Digit Divisors	1 day	Use compatible numbers and place-value patterns to estimate quotients.	**Problem-Based Learning** Solve and Share – *Use mental math with compatible numbers to estimate the quotient with a 2-digit divisor.* **Visual Learning** Visual Learning Bridge- *How can you use compatible numbers to estimate a quotient?* Convince Me! - *Make Sense and Persevere: Determine the best compatible numbers to use to estimate the quotient.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:**	Quick Check 5-2 Lesson 5-2 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.1 MATH.K-12.4

			Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-3: Use Models and Properties to divide with 2-digit divisors.	1 day	Use models to find quotients.	**Problem-Based Learning** Solve and Share – *Use an area model to represent multi-digit division.* **Visual Learning** Visual Learning Bridge- *How can you use area models and properties to find quotients?* Convince Me! - *Make Sense and Persevere: Use area models, place value, and the distributive property to find a quotient with a 2-digit-divisor.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games:	Quick Check 5-3 Lesson 5-3 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.1 MATH.K-12.5

			PearsonRealize.com Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-4: Use Partial Quotients to Divide	1 day	Solve division problems using partial quotients.	**Problem-Based Learning** Solve and Share – *Use estimation to solve a real-world problem involving dividing a 3-digit number by a 2-digit number.* **Visual Learning** Visual Learning Bridge- *How can you use partial quotients to solve division problems?* Convince Me! - *Critique Reasoning: Analyze and explain the reasoning of others.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games:	Quick Check 5-4 Lesson 5-4 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.1 MATH.K-12.3 MATH.K-12.4

			PearsonRealize.com Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-5: Use Sharing to Divide: 2-Digit Divisors	1 day	Use place value and sharing to divide by 2-digit divisors.	**Problem-Based Learning** Solve and Share – *Build on learning by using place-value models and sharing to divide.* **Visual Learning** Visual Learning Bridge- *How can you record division with a 2-digit divisor?* Convince Me! - *Reasoning: Determine the meaning of the remainder in the problem and explain how it can be used to check work.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games:	Quick Check 5-5 Lesson 5-5 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.2 MATH.K-12.4 MATH.K-12.5

			PearsonRealize.com Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-6: Use Sharing to Divide: Greater Dividends	1 day	Use place value and sharing to divide greater dividends.	**Problem-Based Learning** Solve and Share – *Build on learning by using place-value models and sharing to divide greater dividends.* **Visual Learning** Visual Learning Bridge- *How can you record division with a two-digit divisor and a four-digit dividend?* Convince Me! - *Reasoning: Explain why the answer to the problem is reasonable.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com*	Quick Check 5-6 Lesson 5-6 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.2 MATH.K-12.7

			Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-7: Choose a Strategy to Divide		Select from different strategies to divide 3- and 4-digit numbers by 2-digit numbers.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of various division strategies to select division strategies to solve two problems.* **Visual Learning** Visual Learning Bridge- *What are some different strategies I can use to solve a division problem?* Convince Me! - *Reasoning: Explain how to check your answer to a division problem.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation	Quick Check 5-7 Lesson 4-7 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.1 MATH.K-12.2

			Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 5-8: Problem Solving: Make Sense and Persevere	1 day	Make sense of word problems by identifying what is known and the steps that can be taken to solve them.	**Problem-Based Learning** Solve and Share – *Use the Thinking Habits to create a word problem that matches the given equation.* **Visual Learning** Visual Learning Bridge- *How can you make sense of a problem and persevere in solving them?* Convince Me! -Critique Reasoning: *Analyze the problem-solving approach of others and decide if the approach is just right or if there is an easier solution.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation	Quick Check 5-8 Lesson 5-8 Online Quiz	5.NBT.B.6 **Mathematical Practices** MATH.K-12.1 MATH.K-12.2 MATH.K-12.3

			Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-1: Patterns for Dividing with Decimals	1 day	Use mental math and place-value patterns to	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of decimal place value and multiplying decimals by powers of 10 to divide decimals by powers of 10.* **Visual Learning** Visual Learning Bridge- *How can you divide by powers of 10?* Convince Me! - *Use Structure: Use structure of place value system to identify the pattern when a number is divided by 10.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation	Quick Check 6-1 Lesson 6-1 Online Quiz	5.NBT.A.2 5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.7

			Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-2: Estimate Decimal Quotients	1 day	Use reasoning and strategies such as rounding and compatible numbers to estimate quotients in problems with decimals.	**Problem-Based Learning** Solve and Share – *Use knowledge of rounding and estimating whole number quotients to estimate decimal quotients.* **Visual Learning** Visual Learning Bridge- *How can you use estimation to find quotients?* Convince Me! -*Construct Arguments: Compare two estimation strategies, decide which of the two estimates is closer to the exact answer, and explain the reasoning.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com*	Quick Check 6-2 Lesson 6-2 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3

			Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-3: Use Models to Divide by a 1-Digit Whole Number	1 day	Use models to help find quotients in problems involving decimals.	**Problem-Based Learning** Solve and Share – *Use tools such as place-value blocks, drawings, or money to divide a decimal by a whole number.* **Visual Learning** Visual Learning Bridge- *How can you explain patterns in the number of zeros in a product?* Convince Me! -*Reasoning: use compatible numbers to estimate.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation	Quick Check 6-3 Lesson 6-3 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.5

			Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-4: Divide by a 2-Digit Whole Number	1 day	Use models to visualize the relationship between division and multiplication to divide decimals by a 2-digit whole number.	**Problem-Based Learning** Solve and Share – *Use tools such as place-value blocks, drawings, or money to divide a decimal dividend by a 2-digit whole number.* **Visual Learning** Visual Learning Bridge- *How can you divide decimals by a 2-digit whole number?* Convince Me! - *Reasoning: use estimation and number sense to reason about the value of the quotient and placement of the decimal point.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games:	Quick Check 6-4 Lesson 6-4 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.1 MATH.K-12.2 MATH.K-12.4

			PearsonRealize.com Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-5: Divide by a Decimal	1 day	Use models to divide a decimal by a decimal.	**Problem-Based Learning** Solve and Share – *Use hundredths grids or other drawings to solve a word problem involving the division of two money amounts expressed as decimals.* **Visual Learning** Visual Learning Bridge- *How can you divide a decimal by a decimal?* Convince Me! - *Construct Arguments: Determine if the quotient of two decimal numbers is less than, equal to, or greater than the quotient of two whole numbers with the same digits.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem*	Quick Check 6-5 Lesson 6-5 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.3 MATH.K-12.7

			Solving **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Use play money to create division problems involving dollars and cents. Students visualize what the answer will look like. Have students cooperatively work in groups of 2 to create and solve their own division problems using the play money Students will work in teams of two to play a game using a deck of cards. First student will draw 4 cards, use 2as the divisor and 2 as the dividend. Instruct student to place a decimal point wherever they want in each. The second student will solve the problem. Students check their answers using a calculator. **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 6-6: Problem Solving: Reasoning	1 day	Use reasoning to solve problems by making sense of quantities and relationships in the situation.	**Problem-Based Learning** Solve and Share – *Extend knowledge of reasoning and thinking habits to solve a multi-step problem that includes dividing a decimal by a 2-digt whole number.*	Quick Check 6-6 Lesson 6-6 Online Quiz	5.NBT.B.7 **Mathematical Practices** MATH.K-12.2 MATH.K-12.4

			Visual Learning Visual Learning Bridge- *How can you use reasoning to solve problems?* Convince Me! - R*easoning: Use reasoning to decide how many 12-fluid ounce jars can be filled based on given quantities of paint mixture.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		MATH.K-12.6

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics

MATH.K-12.5	Use appropriate tools strategically
MATH.K-12.6	Attend to precision
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.
MATH.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.
MATH.K-12.7	Look for and make use of structure
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.5.NBT.A.4	Use place value understanding to round decimals to any place.
MATH.5.NBT.B.5	With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.
MATH.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.
MATH.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.

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illustrate a math story to support the objectives of unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL

- ST Math

- Kahoot!

- Tools (Envision 2020)

- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity
- Topic 2
  - Alligators and Crocodiles
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
  - Home of the Best Amusement Parks
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
    - Science and Engineering: 3-5-ETS1-1
  - Calorie Information in Restaurant Menus
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4
  - Useful Tools for Traveling
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4
- Topic 3
  - Bouncy Balls
    - Science: 5-PS2-1
  - Oldest Fort
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
    - Science and Engineering: 3-5-ETS1-1
  - Fabulous Ferries
    - Science and Engineering: 3-5-ETS1-1
- Topic 4
  - Long Distance Running
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
  - Uniforms
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4
  - Apollo 11
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4
    - Science: 5-ESS1-1, 5-ESS1-2
  - Sales Tax
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.4
- Topic 5
  - Field Trip Destinations
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
  - The Assembly Line
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
    - Science and Engineering: 3-5-ETS1-1
  - What is a Marathon?
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
- Topic 6
  - Grateful for Gratuity

        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
    - Punching the Clock
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
    - Food for Thought
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
    - Construction
        - Science and Engineering: 3-5-ETS1-1
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4

- Envision Stem Project.
    - Topic 2 Theme: Producers and Consumers: Use the internet and other sources to find information about producers and consumers. Standard: 5-LS2-1
    - Topic 3 Theme: Water Usages: Use the internet and other sources to find how much water is used for household activities like taking a shower or bath, using a dishwasher, hand washings dishes and using a washing machine. Standard: 5-LS2-1
    - Topic 4 Theme: Solar Energy: Use the internet and other sources to learn about solar energy. Find at least five ways we use the Sun's energy today. Standard: 5-ESS3-1
    - Topic 5 Theme: Average Temperature: Use a weather site from the internet and another source of daily weather reports to find the average daily temperatures for your city or town for everyday of one month. Standard: 5-ESS3-1
    - Topic 6 Theme: Use the internet or other sources to learn about the states of water. Find at least 5 examples of water in nature as a solid, as a liquid and as a gas. At what temperature does liquid water change to ice? At what temperature does liquid water change to water vapor? Standards: 5-PS1-3, 2-ESS2-3.

- Problem Solving Reading Activity

Unit 3- Use Equivalent Fractions to Add and Subtract Fractions

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **2nd Trimester**
Length: **12 Days**
Status: **Published**

Summary of the Unit

In this unit of study, the students will focus on developing understanding of how to add and subtract fractions and mixed numbers with unlike denominators by using equivalent fractions. This unit is based on standard 5.NF.A

Enduring Understandings

- Fractions with unlike denominators can be represented using equivalent fractions with like denominators.
- Fractions with unlike denominators can be added by replacing them with equivalent fractions that have common denominators.
- Sums and differences of mixed numbers can be estimated by rounding to the nearest whole number or by using benchmark fractions.
- A number line can be used to determine if estimates are reasonable.
- Models can be used to show different ways of adding and subtracting mixed numbers.

Essential Questions

- What does it mean to add and subtract fractions and mixed numbers with unlike denominators?
- How can the sums and differences of fractions and mixed numbers be estimated?
- How do you add and subtract fractional parts with like and unlike denominators?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggest-ed Time-line per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 7-1: Estimate	1 day	Estimate sums and differences of	**Problem-Based Learning** Solve and Share – Use number sense to estimate the	Quick Check 7-1	5.NF.A.2

Sums and Differences of Fractions		fractions by using the nearest half or whole number.	sum of two fractions. **Visual Learning** Visual Learning Bridge- How can you estimate the sum of two fractions? Convince Me! - Critique Reasoning: Read and analyze a statement to decide whether it is reasonable and justify using words and symbols. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge	Lesson 7-1 Online Quiz	5.NF.A.1 Mathematical Practices MP.2, MP.3

			Closure Lesson Self-Assessment PearsonRealize.com		
Lesson 7-2: Finds Common Denominators	1 day	Find common denominators for fractions with unlike denominators.	**Problem-Based Learning** Solve and Share – Find and represent unit fractions of the same whole with different denominators. **Visual Learning** Visual Learning Bridge- How can you find common denominators? Convince Me! - Use Appropriate Tools: Draw rectangles to find equivalent fractions to given fractions. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com	Quick Check 7-2 Lesson 7-2 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.3, MP.5

			Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Model finding the least common multiple of two numbers; then three numbers. Students use fraction tiles to compare. Extend to using for LCD to write equivalent fractions. Have students try several examples. Students play a teacher-created multiples game or worksheet. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-3: Add Fractions with Unlike Denominators	1 day	Add fractions with unlike denominators using equivalent fractions with a common denominator.	**Problem-Based Learning** Solve and Share – Use different problem-solving strategies to add fractions with unlike denominators. **Visual Learning** Visual Learning Bridge- How can you add fractions with unlike denominators? Convince Me! - Construct Arguments: Use number sense to analyze the information given in the problem and explain why equivalent fractions that use different numbers in the numerator and denominator can have the same value. **Guided Practice** **Differentiated Instruction/Centers:**	Quick Check 7-3 Lesson 7-3 Online Quiz	5.NF.A.1. 5.NF.A.2 Mathematical Practices MP.1, MP.3, MP.4

			Teacher **Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Give five students a fraction card to hold in front of room, ask class how together they form a whole. Add a sixth student, so now there is a "leftover part". Students should be able to see how improper fractions are another name for mixed numbers. Model renaming improper fractions and mixed numbers. Have students try several examples in their notes. Then, write a mixed number or improper fraction on the board; students		

			rename and hold up answer. Use a number line as a visual representative to show relative position. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-4: Subtract Fractions with Unlike Denominators	1 day	Subtract fractions with unlike denominators.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of adding fractions with unlike denominators to subtract fractions with unlike denominators. **Visual Learning** Visual Learning Bridge- How can you subtract fractions with unlike denominators Convince Me! -Critique Reasoning: Use number sense to determine if the statement is correct and justify the answer. Guided Practice **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com	Quick Check 7-4 Lesson 7-4 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.3, MP.4, MP.8

			Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-5: Add and Subtract Fractions	1 day	Write equivalent fractions to add and subtract fractions with unlike denominators.	**Problem-Based Learning** Solve and Share – Use different strategies to add and subtract fractions with unlike denominators. **Visual Learning** Visual Learning Bridge- How can adding and subtracting fractions help you solve problems? Convince Me! -Make sense and Persevere: Use estimation to check that an answer is reasonable. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com)	Quick Check 7-5 Lesson 7-5 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.1, MP.2, MP.3

			Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Teacher will provide 2 or 3 simple cookie recipes. Rewrite the recipe so students must add or subtract fractions to determine the amount of each ingredient. Distribute a copy of the revised recipe and have students calculate the needed quantities to come up with the correct amount for each ingredient. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-6: Estimate Sums and Differences of Mixed Numbers	1 day	Estimate sums and differences of fractions and mixed numbers.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of estimating sums and differences of fractions to estimate the sum of two mixed numbers with unlike denominators. **Visual Learning** Visual Learning Bridge- What are some ways to	Quick Check 7-6 Lesson 7-6 Online Quiz	5.NF.A.2 5.NF.A.1 Mathematical Practices MP.1, MP.3, MP.8

			estimate? Convince Me! - Critique Reasoning: determine which of two ½ units that are equally close to a mixed number makes more sense for the problem situation. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Give each pair of students a number line from 0 to 2. Write the fractions1/8, 1 ¼, 1 5/8, ¾, 3/8, 1 7/8 ¼, 1 ¾, and l 1/8 on the board.		

			Instruct one student to plot the fractions on the number line closer to 0; the other student plots mixed numbers closer to2.Review rules for estimating. Discuss how estimating sums and differences with mixed numbers is like estimating sums and differences with decimals. Explain that when then numerator is equal to or greater than half of the denominator, round up. If it is less, round down. Show various examples on board. Students follow in notebook/on white board and use a number line as a visual aid. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-7: Use Models to Add Mixed Numbers	1 day	Add mixed numbers using models.	**Problem-Based Learning** Solve and Share –Activate prior knowledge of adding mixed numbers with like denominators to model the addition of mixed numbers with unlike denominators. **Visual Learning** Visual Learning Bridge- How can you model addition of mixed numbers? Convince Me! - Critique Reasoning: Read and analyze statement to determine and explain if the method chosen will work. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher**	Quick Check 7-7 Lesson 7-7 Online Quiz	5.NF.A.2 5.NF.A.1 Mathematical Practices MP.1, MP.3, MP.5

			Led: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-8: Add Mixed Numbers	1 day	Add mixed numbers using equivalent fractions and a common denominator.	Problem-Based Learning Solve and Share – Activate previous understanding of adding mixed numbers with unlike denominators using models. **Visual Learning** Visual Learning Bridge- How can you add mixed numbers? Convince Me! - Critique Reasoning: Determine and explain if the calculated	Quick Check 7-8 Lesson 7-8 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.3, MP.7

			statement is reasonable. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-9: Use Models to Subtract Mixed Numbers	1 day	Use models to subtract mixed numbers.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of adding mixed numbers to subtract mixed numbers using models.	Quick Check 7-9 Lesson 7-9 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.4, MP.5, MP.8

			Visual Learning Visual Learning Bridge- How can you model subtraction of mixed numbers? Convince Me! - Use Appropriate Tools: Use fraction strips to subtract mixed numbers. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure**		

			Lesson Self-Assessment PearsonRealize.com		
Lesson 7-10: Subtract Mixed Numbers	1 day	Subtract mixed numbers using equivalent fractions and a common denominator	Problem-Based Learning Solve and Share – Use a bar diagram to subtract a fraction from a mixed number with unlike denominators. **Visual Learning** Visual Learning Bridge- How can you subtract mixed numbers? Convince Me! - Critique Reasoning: Estimate the difference of two mixed numbers and determine if the estimation is reasonable based on the calculated difference. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com	Quick Check 7-10 Lesson 7-10 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.3, MP.6, MP.7

			Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-11: Add and Subtract Mixed Numbers	1 day	Add and subtract mixed numbers using equivalent fractions and a common denominator.	**Problem-Based Learning** Solve and Share – Use reasoning to solve a real-world problem involving adding and subtracting mixed numbers and a whole number. **Visual Learning** Visual Learning Bridge- How can adding and subtracting mixed numbers help you solve problems? Convince Me! - Make Sense and Persevere: Formulate a plan to solve a multi-step real-world problem involving addition and subtraction of mixed numbers **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent	Quick Check 7-11 Lesson 7-11 Online Quiz	5.NF.A.1 5.NF.A.2 Mathematical Practices MP.1, MP.2, MP.6

			Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 7-12: Problem Solving: Model with Math	1 day	Represent a problem situation with a mathematical model	**Problem-Based Learning** Solve and Share – Use a model to solve a multi-step real-world problem involving adding and subtracting mixed numbers. **Visual Learning** Visual Learning Bridge- How can you represent a problem with a bar diagram? Convince Me! - Model with Mathematics: Use a bar diagram and an equation to represent the problem. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy.	Quick Check 7-12 Lesson 7-12 Online Quiz	Mathematical Practices MP.1, MP.2, MP.4 5.NF.A.2

			Advanced: Enrichment Technology: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics
MATH.K-12.5	Use appropriate tools strategically
MATH.K-12.6	Attend to precision
MATH.K-12.7	Look for and make use of structure
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.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.
MATH.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.

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity
  - Topic 7
    - Gumbo
      - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4
  - Florida Largemouth Bass
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
    - ELA/Literacy: RI.5.9, W.5.8, W.5.2., W.5.3
  - Oranges
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4
- Envision Stem Project.

- Topic 7 Theme: Fossils Tell Stories. Use the internet and other resources to find out more about fossils. What are fossils? How and where do we find them? What do they tell us about the past? What can they tell us about the future? Pay particular attention to fossils from the Eocene epoch. Standard: ESS3-1

- Problem Solving Reading Activity

Unit 4- Multiply & Divide Fractions

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **2nd Trimester**
Length: **17 Days**
Status: **Not Published**

Summary of the Unit

In this unit of study, students will focus on extending conceptual understandings of multiplication and division from whole numbers to fractions and using this understanding to solve problems involving multiplication and division with fractions and mixed numbers. This unit is based on standard 5.NF.B

Enduring Understandings

- Benchmark fractions and other strategies aid in estimating the reasonableness of results with operations of fractions.
- The use of area models, fraction strips, and number lines are effective strategies to model products and quotients.
- Fractions are division models.
- Multiplication can be interpreted as scaling/resizing.

Essential Questions

- What does it mean to multiply whole numbers and fractions?
- How do you use previous understandings of multiplication and division to multiply or divide fractions?
- How does multiplication and division of fractions help to solve real world problems?
- How can multiplication with whole numbers and fractions be shown using models and symbols?
- What are the standard procedures for estimating and finding products and quotients of fractions and mixed numbers?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 8-1: Multiply a	1 day	Multiply a fraction by a whole	**Problem-Based Learning** Solve and Share – Activate prior knowledge of using models and	Quick Check 8-1	5.NF.B.4a 5.NF.B.6

Fraction by a Whole Number		number.	multiplying a unit fraction by a whole number to find the product of a fraction and a whole number. **Visual Learning** Visual Learning Bridge- What are some ways to multiply a fraction by a whole number? Convince Me! - Use Structure: Use repeated addition to represent multiplication and to check if the product is reasonable. **Guided Practice** **Differentiated Instruction/Centers**: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure**	Lesson 8-1 Online Quiz	Mathematical Practices MP.3, MP.4, MP.7

			Lesson Self-Assessment PearsonRealize.com		
Lesson 8-2: Multiply a Whole Number by a Fraction	1 day	Multiply a whole number by a fraction.	**Problem-Based Learning** Solve and Share –Use a model to multiply a whole number by a fraction. **Visual Learning** Visual Learning Bridge- How can you multiply a whole number by a fraction? Convince Me! - Model with Math: Use models to represent multiplication of a whole number by a fraction and to check if the given product is correct. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and	Quick Check 8-2 Lesson 8-2 Online Quiz	5.NF.B.4a 5.NF.B.6 Mathematical Practices MP.3, MP.4

			Today's Challenge **Optional Activities:** Write a word problem on overhead such as: If Pete earns $15 last month for his newspaper route. If he saves 2/3 of his earnings, how much did he save? Have students draw a shape and divide into thirds. Discuss how to find the answer Explain steps to finding product using algorithm of dividing the whole number by the denominator of the fraction and multiplying the quotient by the numerator. Solve several examples with students. Have students complete problems on white board or in centers. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-3: Multiply Fractions and Whole Numbers	1 day	Multiply factions and whole numbers.	**Problem-Based Learning** Solve and Share –Multiply a fraction and a whole number to sole a real-world problem. **Visual Learning** Visual Learning Bridge- How can you multiply fractions and whole numbers? Convince Me! - Be Precise: Make the connection that the commutative property applies when multiplying a fraction by a whole number or a whole number by a fraction. **Guided Practice** Differentiated Instruction/Centers: **Teacher**	Quick Check 8-3 Lesson 8-3 Online Quiz	5.NF.B.4a Mathematical Practices MP.3, MP.4, MP.6

			Led: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-4: Use Models to Multiply Two Fractions	1 day	Use models to multiply two fractions.	**Problem-Based Learning** Solve and Share – Use a model to multiply two unit fractions. **Visual Learning** Visual Learning Bridge- How can you use a model to multiply fractions? Convince Me! - Reasoning: Use an area model to find a product. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: Reteach to	Quick Check 8-4 Lesson 8-4 Online Quiz	5.NF.B.4a Mathematical Practices MP.1, MP.2, MP.4

			Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Distribute teacher-created worksheet on graph paper where students shade in two fractional factors with different colors and discover product (numerator is shaded with both colors; denominator is total shaded). **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-5: Multiply Two Fractions	1 day	Multiply two fractions.	**Problem-Based Learning** Solve and Share – Build on prior knowledge of multiplying fractions and whole numbers using models to multiply two fractions without using models. **Visual Learning** Visual Learning Bridge- How	Quick Check 8-5 Lesson 8-5 Online Quiz	5.NF.B.4ba Mathematical Practices MP.4, MP6

			can you find the product of two fractions? Convince Me! - Models with Math: Write a math sentence to solve the problem. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Write a multiplication problem on the board involving multiplying fractions (use money and compare to decimal). Discuss multiplying fractions and key word "of". **Closure**		

			Lesson Self-Assessment PearsonRealize.com		
Lesson 8-6: Area of a Rectangle	1 day	Find the area of a rectangle using fractions and diagrams.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of multiplying fractions to find the area of a rectangle with fractional side lengths. **Visual Learning** Visual Learning Bridge- How can you find the area of a rectangle with fractional side lengths? Convince Me! - Reason: Use reasoning skills to determine what the numbers in a problem mean and how they are related to create a model to the area. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review	Quick Check 8-6 Lesson 8-6 Online Quiz	5.NF.B.4b Mathematical Practices MP.2, MP.3, MP.5

			and Today's Challenge **Optional Activities:** On graph paper, have students draw rectangles and count the squares to calculate the area. Then have them construct a table showing length, width, and area of each. Students then write the formula for area in their own words. Students will tile it with unit squares of the appropriate unit fraction side lengths and show that the area is the same as would be found my multiplying the side lengths. Students will multiply side length to find areas of rectangles and represent fraction products as rectangular areas. Ask students for formula. Write a formula on the board; go over several examples using both whole numbers and then fractions to solve. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-7: Multiply Mixed Numbers	1 day	Use models, equations, and previously learned strategies to multiply mixed numbers.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of multiplying fractions and whole numbers and multiplying two fractions to multiply a whole number and a mixed number. **Visual Learning** Visual Learning Bridge- How can you find the area of a rectangle with fractional side lengths? Convince Me! Model with Math: Use an equation to model	Quick Check 8-7 Lesson 8-7 Online Quiz	5.NF.B.6 Mathematical Practices MP.1, MP.4, MP.8

			work. **Guided Practice** **Differentiated Instruction/Centers**: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Begin with a word problem where a fraction is added multiple times. Review solution with class. Discuss Monitor student responses. Ensure students recall how to rename mixed numbers as improper fractions. Model using an algorithm of renaming mixed numbers as improper fractions and multiplying straight across or		

			cross-multiplying. Have students try several examples. Students use graph paper to illustrate how they arrived at their answers. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-8: Multiplication of Scaling	1 day	Compare the size of the product to the size of one factor without multiplying to consider multiplication as scaling.	**Problem-Based Learning** Solve and Share – Activate prior knowledge to compare three pairs of factors to determine which is the greatest and whish is the least without multiplying. **Visual Learning** Visual Learning Bridge-How can you use number sense to evaluate the size of products? Convince Me! - Use Structure: Explain an alternate way to represent the value of a fraction equaled to 1 using a whole number. **Guided Practice** Differentiated Instruction/Centers: **Teacher** **Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology:** Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com	Quick Check 8-8 Lesson 8-8 Online Quiz	5.NF.B.5a 5.NF.B.5b Mathematical Practices MP.3, MP.6, MP.7

			Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 8-9: Problem Solving: Make Sense and Persevere	1 day	Use previously learned knowledge to make sense of problems and persevere in solving them.	**Problem-Based Learning** Solve and Share – Students solve a multi-step real-world problem that involved the multiplication of whole numbers and mixed numbers. **Visual Learning** Visual Learning Bridge- How can you make sense of problems and persevere in solving them? Convince Me! - Make Sense and Persevere: Identify what is known in the problem, develop and choose a plan, and check for reasonableness. **Guided Practice** Differentiated Instruction/Centers: **Teacher** **Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving	Quick Check 8-9 Lesson 8-9 Online Quiz	Mathematical Practices MP.1, MP.3, MP.4, MP.6

			Additional Activities: Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-1: Fractions and Division	1 day	Understand how fractions are related to division.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of both division and fractions to solve a problem involving equal shares. **Visual Learning** Visual Learning Bridge- How are fractions related to division? Convince Me! - Reasoning: Use previous knowledge of fractions and how fractions are related to division to solve the problem. **Guided Practice** Differentiated Instruction/Centers: **Teacher** **Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment Technology: Practice	Quick Check 9-1 Lesson 9-1 Online Quiz	5.NF.B.3 Mathematical Practices MP.1, MP.2, MP.3

			Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-2: Fractions and Mixed Numbers as Quotients	1 day	Implement division of fractions to show quotients as fractions and mixed numbers.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of d division to divide two whole numbers that have a quotient which will lead to a mixed number. **Learning** Visual Learning Bridge- How can you show a quotient using a fraction and mixed number? Convince Me! - Construct Reasoning: Use a fraction or mixed numbers to represent a quotient to explain the answer to the problem. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-	Quick Check 9-2 Lesson 9-2 Online Quiz	5.NF.B.3 Mathematical Practices MP.3, MP.6

			Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-3: Use Multiplication to Divide	1 day	Use multiplication to divide a whole number by a unit fraction.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of dividing whole numbers and about representing tractions to solve a problem involving finding how many ¼ wrap serving are in 5 wraps. **Visual Learning** Visual Learning Bridge- How is dividing by a fraction related to multiplication? Convince Me! - Use Structure: Use the relationship between multiplication and division to write a division equation related to a given multiplication equation.	Quick Check 9-3 Lesson 9-3 Online Quiz	5.NF.B.7b Mathematical Practices MP.4, MP.7

			Guided Practice **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-4: Divide Whole Numbers by Unit Fractions	1 day	Use models such as pictorial models or a number line to show dividing a whole number by a unit fraction.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of using multiplication and models to solve a word problem involving dividing a whole number by a unit fraction. **Visual Learning** Visual Learning Bridge- How can you divide by a unit fraction?	Quick Check 9-4 Lesson 9-4 Online Quiz	5.NF.B.7b Mathematical Practices MP.1, MP.5, MP.7

			Convince Me! - Use Structure: Use an area model or number line to divide the whole number by a unit fraction. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Write a multiplication problem on the board involving dividing fractions (i.e. If half of a candy bar is split between two friends, how much will each person get?). Discuss multiplication and division being inverse operations. Model using actual candy bar as a visual. Distribute fraction strips to		

			partners. Model solving problems with strips on overhead. Students will solve problems given with strips. Begin with a whole number as dividend and fraction as divisor. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-5: Divide Unit Fractions by Non-Zero Whole Numbers	1 day	Use models to divide unit fractions by non-zero whole numbers.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of fractions and division to divide a fraction by a whole number. **Visual Learning** Visual Learning Bridge- How can you model dividing a unit fraction by a whole number? Convince Me! - Reasoning: Explain how dividing by a whole number is the same as multiplying by a unit fraction. **Guided Practice** Differentiated Instruction/Centers: **Teacher Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation	Quick Check 9-5 Lesson 9-5 Online Quiz	5.NF.B.7a Mathematical Practices MP.2, MP.3, MP.5

			Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Students write word problems involving dividing a unit fraction by a whole number. Have classmates solve problems. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-6: Divide Whole Numbers and Unit Fractions	1 day	Use models to divide whole numbers and unit fractions. Check your answer using multiplication.	**Problem-Based Learning** Solve and Share – Use a model to solve a problem involving dividing a unit fraction by a whole number. **Visual Learning** Visual Learning Bridge- How can you divide with unit fractions and whole numbers? Convince Me! - Reasoning: Use an area model and equation to represent and solve a problem involving division of a whole number by a unit fraction. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment	Quick Check 9-6 Lesson 9-6 Online Quiz	5.NF.B.7a Mathematical Practices MP.1, MP.2, MP.4

			Technology: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Students write word problems involving dividing a whole number by a unit fraction. Have classmates solve problems. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-7: Solve Problems Using Division	1 day	Solve multi-step problems involving division with unit fractions.	**Problem-Based Learning** Solve and Share – Solve a multi-step problem that involves division of a whole number by a unit fraction. **Visual Learning** Visual Learning Bridge- How can you solve division problems with unit fractions? Convince Me! - Reasoning: Write, solve, and explain a real-world problem involving addition of whole numbers and then dividing by a unit fraction.	Quick Check 9-7 Lesson 9-7 Online Quiz	5.NF.B.7c 5.NF.B.7b

			Guided Practice **Differentiated Instruction/Centers**: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 9-8: Problem Solving: Repeated Reasoning	1 day	Notice repetition in calculations and generalize about how to divide whole numbers and unit fractions.	**Problem-Based Learning** Solve and Share – Activate prior knowledge to generalize about the quotients of unit fractions and whole numbers. **Visual Learning** Visual Learning Bridge- How do you use repeated reasoning when dividing whole numbers and unit fractions? Convince Me! - Generalize:	Quick Check 9-8 Lesson 9-8 Online Quiz	Mathematical Practices MP.2, MP.4, MP.8 5.NF.B.7a

			Generalize procedures for dividing a whole number by a unit fraction or a unit fraction by a whole number. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics
MATH.K-12.5	Use appropriate tools strategically
MATH.K-12.6	Attend to precision

MATH.K-12.7	Look for and make use of structure
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.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.
MATH.5.NF.B.4.a	Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.
MATH.5.NF.B.4.b	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.
MATH.5.NF.B.5.a	Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
MATH.5.NF.B.5.b	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.
MATH.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.
MATH.5.NF.B.7.a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
MATH.5.NF.B.7.b	Interpret division of a whole number by a unit fraction, and compute such quotients.
MATH.5.NF.B.7.c	Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.

Climate Change Activity

Activity #1:

5.NF.B.3 Students will begin by viewing "The Effects of Climate Change" from Discovery Education at the link below. Students will then discuss with a partner the effects that climate change would have on the yields produced by common crops, such as apples, corn, or grapes. Students will then write a word problem involving division of a whole number that leads to an answer in the form of a fraction. For example, "Last year, a local farm harvested 6 bushels of apples per day. Due to a reduction in apples, 6 bushels must be shared between 8 stores. What fraction of a bushel will each store receive?" Students will swap with a partner and solve each other's respective word problems.

Video: https://google.discoveryeducation.com/learn/videos/b0842f4b-777b-4998-8187-05bf280d1b8e/?embed=false&embed_origin=false

Activity #2

5.NF.B.7c Students will begin by viewing "Climate Change" from Brainpop. Students will then review with a partner the effects that climate change would have on the yields produced by common crops. Students will then write a word problem involving division of unit fractions by non-zero whole numbers. For example: "Last year, each store received 1/5 of the yield from a crop of corn. This year, 1/5 of the crop must be shared by two stores. What fraction of the yield will each store receive?"

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.

- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review
- Model various numbers on a hundredths grid or use base ten blocks to demonstrate decimal place value.

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Pick a Project Activity

- Topic 8
  - Patchwork Quilts
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
  - A Sticky Note Mosaic
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
  - Calcium in the Human Body
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4
  - Caverns
    - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
    - Science: 5-ESS2-1

- Topic 9
    - Prototypes
        - Science and Engineering: 3-5-ETS1-1
    - Pizza and Fractions
        - ELA/Literacy: W.5.8, W.5.2., W.5.3
    - Mnemonic Devices
        - Technology Standards: 8.1.5.A.1
        - ELA/Literacy: W.5.2

- Envision Stem Project.
    - Topic 8 Theme: Kitchen Chemistry. Use the internet and other sources to learn about physical changes to substances. Look or examples of physical changes that occur in the kitchen. Standard: 2-PS1-4. C
    - Topic 9 Theme: Thermal Energy. Use the internet and other sources to learn about thermal energy. Make a list of three ways you use thermal energy in your home and at school. Which use is most important to you? Why? Standard: PS3-1

- Problem Solving Reading Activity

Unit 5- Represent & Interpret Data

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **4 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students will use line plots to represent and interpret data, with an emphasis on measurement data involving fractions. Students use the data to solve problems involving fraction operations. This unit is based on standards 5.DL.A.1-5

Enduring Understandings

- Data can be represented and interpreted using a line plot.
- Like frequency tables, line plots show how often data values occur.
- Real world problems can be solved with line plots.

Essential Questions

- How can line plots be used to represent data and answer questions?
- How can data be organized and represented to provide insight into the relationship between quantities?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 10-1: Analyze Line Plots	1 day	Read and analyze line plots.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to solve a problem using information presented in a line plot, then use the line plot to answer a question about the data.* **Visual Learning** Visual Learning Bridge- *How can you analyze data displayed in a line plot?*	Quick Check 10-1 Lesson 10-1 Online Quiz	5.DL.A.1 5.DL.A.4 **Mathematical Practices** MP.K-12.1 MP.K-12.2

			Convince Me! - *Reasoning: Explain how to answer specific questions about a data set from information provided.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 10-2: Make Line Plots	1 day	Organize and display data in a line plot.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to organize data by making a line-plot and then use the*	Quick Check 10-2 Lesson 10-2	5.DL.A.2 5.DL.A.3 5.DL.A.4

			line plot to answer a question that used the data. **Visual Learning** Visual Learning Bridge- *How can you use line plots to organize and represent measurement data?* Convince Me! - *Reasoning: Analyze and use data in the line plot to answer specific questions related to the data.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge*	Online Quiz	**Mathematical Practices** MP.K-12.1 MP.K-12.2 MP.K-12.8

			Closure Lesson Self-Assessment *PearsonRealize.com*		
Lesson 10-3: Solve problems using data in a line plot.	1 day	Solve problems using data in a line plot.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to analyze measurement data represented in a line plot.* **Visual Learning** Visual Learning Bridge- *How can you use measurement data represented in a line plot to solve problems?* Convince Me! - *Critique Reasoning: Analyze and evaluate a statement made about the data in a line plot. Justify whether or not the statement is correct.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus:	Quick Check 10-3 Lesson 10-3 Online Quiz	5.DL.A.1 5.DL.A.2 5.DL.A.3 5.DL.A.4 5.DL.B.5 **Mathematical Practices** MP.K-12.1 MP.K-12.2 MP.K-12.3

			PearsonRealize.com Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 10-4: Problem Solving: Critique Reasoning	1 day	Critique the reasoning of others using understanding of line plots and fractions.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of reading line plots to decide whether each of several statements makes sense.* **Visual Learning** Visual Learning Bridge- *How can you critique the reasoning of others?* Convince Me! -*Critique Reasoning: Critique a statement about a line plot and determine if the statement is reasonable.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving*	Quick Check 10-4 Lesson 10-4 Online Quiz	**Mathematical Practices** MP.K-12.1 MP.K-12.2 MP.K-12.3 MP.K-12.4 MP.K-12.6 5.DL.A.1 5.DL.A.2 5.DL.A.3 5.DL.A.4 5.DL.B.5 5.NF.A.2

			Additional Activities: Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics
MATH.K-12.6	Attend to precision
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.5.DL.A.1	Understand how different visualizations can highlight different aspects of data. Ask questions and interpret data visualizations to describe and analyze patterns.
MATH.5.DL.A.2	Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g., chart, storyboard, video presentation).
MATH.5.DL.A.3	Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).
MATH.5.DL.A.4	Using appropriate visualizations (i.e., double line plot, double bar graph), analyze data across samples.
MATH.5.DL.B.5	Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). Use operations on fractions for this grade to solve problems involving information presented in line plots.

Resources

- Pearson Realize: Math series. https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.

https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
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Gifted Students

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Special Education Students

- Fluency review Activity
- Vocabulary Review
- Model various numbers on a hundredths grid or use base ten blocks to demonstrate decimal place value.

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity
    - Topic 10
        - Big Data
            - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4, 8.1.5.A.5
    - Old Cents
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
    - Giant Sequoias
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4, 8.1.5.A.5
    - Plant Leaves
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4, 8.1.5.A.5

- Envision Stem Project.
    - Topic 10 Theme: Wildfires. Use the internet and other sources to learn about wildfires. Investigate how wildfires affect ecosystems. Explore the cost and benefits of wildfires. List five things in an ecosystem. Research how long each one takes to recover form a wildfire. Standard: Ess2-2, ESS3-1

Unit 6-Understand Volume Concepts

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **5 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students will develop an understanding of the measurable attribute of volume and on using numbers and operations to compute the volume of rectangular prisms and irregular figures. This unit is based on standard 5.M.B

Enduring Understandings

- Volume is an attribute of three-dimensional space and is measured in cubic units.
- Volume can be found by repeatedly adding the area of the base or by multiplying all three dimensions.
- Multiple rectangular prisms can have the same volume.

Essential Questions

- In the real world, how do you solve problems relating to measurement?
- What is the meaning of volume of a solid?
- How can the volume or a cube or rectangular prism be found?
- How can three-dimensional shapes be represented and analyzed?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 11-1: Model Volume	1 day	Find the volume of solid figures.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to draw or construct models to find the number of cubes that make up a rectangular prism.* **Visual Learning** Visual Learning Bridge- *How can you measure space inside of a solid figure?* Convince Me! -*Reasoning: use a picture to determine the volume*	Quick Check 11-1 Lesson 11-1 Online Quiz	5.M.B.2a 5.M.B.2b **Mathematical Practices** MP.K-12.2 MP.K-12.5

			of a solids. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 11-2: Find the volume of rectangular prisms using a formula.	1 day	Find the volume of rectangular prisms using a formula.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to solve a real-world problem involving the volume of a rectangular prism.* **Visual Learning** Visual Learning Bridge- *How can you use a formula to find the volume of a rectangular prism?* Convince Me! - *Reasoning: Determine that rectangular prisms with different dimension can still have the same volume.* **Guided Practice** **Differentiated Instruction/Centers:**	Quick Check 11-2 Lesson 11-2 Online Quiz	5.M.B.4 5.M.B.2b **Mathematical Practices** MP.K-12.2 MP.K-12.3

			Teacher Led: Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Distribute 24 connecting cubes to each student. Instruct the students to use all the cubes to form a rectangular prism. Have students write the length, width, and height of their prisms in a table provided by teacher. Students will then calculate the volume by counting the cubes. • Discuss as a class how the different prisms all have the same volume of the 24 cubic units. Have students explore how volume is related to the length, width, and height of a rectangular prism **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 11-3: Combine Volume of Prisms	1 day	Find the volume of a solid figure that is the combination of two or more rectangular prisms.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to find the volume of a figure made by combining two rectangular prisms.*	Quick Check 11-3 Lesson 11-3 Online Quiz	5.M.4b 5.M.4c **Mathematical Practices** MP.K-12.2 MP.K-12.4 MP.K-12.7

			Visual Learning Visual Learning Bridge- *How can you find the volume of a solid figure composed of two rectangular prisms?* Convince Me! - *Reasoning: Separate a combined solid to calculate the total volume. Compare results to check for reasonableness.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 11-4: Solve Word Problems Using Volume	1 day	Use models, prior knowledge of volumes, and previously learned strategies to solve word problems involving volume.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to solve a real-world problem involving the volume of a building that can be broken into two rectangular prisms.* **Visual Learning** Visual Learning Bridge- *How can you use volume formulas to*	Quick Check 11-4 Lesson 11-4 Online Quiz	5.M.4 **Mathematical Practices** MP.K-12.1 MP.K-12.3 MP.K-12.4

			solve real-world problems? Convince Me! - Critique *Reasoning: Notice that there are different ways to solve a word problem. -Break a word problem into smaller parts to solve for the volume of a rectangular prism.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 11-5: Problem Solving: Use Appropriate Tools	1 day	Use previously learned knowledge about volumes to choose the appropriate tools to solve volume problems.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to select appropriate tools to solve a volume problem.* **Visual Learning** Visual Learning Bridge- *How can you use appropriate tools to solve volume problems?*	Quick Check 11-5 Lesson 11-5 Online Quiz	**Mathematical Practices** MP.K-12.4 MP.K-12.5 MP.K-12.7 5.M.4

			Convince Me! - *Use Appropriate Tools: Choose an appropriate tool (cubes, geometry software, and grid paper) to help solve a problem involving volume.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		

MATH.5.M	Measurement
MATH.5.M.B.2.a	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.
MATH.5.M.B.2.b	A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
MATH.5.M.B.4	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
MATH.5.M.B.4.b	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.
MATH.5.M.B.4.c	Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts,

applying this technique to solve real world problems.

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
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- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
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- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
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- Which One Doesn't Belong: Thought-provoking puzzles.
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- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity-Topic 11
    - Florida Skyscrapers
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3
        - Science and Engineering: 3-5-ETS1-1
    - Curious Cats
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2
        - Science and Engineering: 3-5-ETS1-1
        - ELA/Literacy: W.5.8, W.5.2., W.5.3

    - Trucks
        - Technology Standards: 8.1.5.A.1, 8.1.5.A.2, 8.1.5.A.3, 8.1.5.A.4, 8.1.5.A.5

- Envision Stem Project Topic 11 Theme: Everyday Energy. Use the internet and other sources to learn more about these five types of energy: electrical. light, mechanical, sound, and thermal. Make a table of the various types of energy you use every day. Include at least one example of how you use each type of energy. Standard: 5-PS3-1

Unit 7- Convert Measurement

Content Area: **Mathematics**
Course(s): **5th Grade Math**
Time Period: **3rd Trimester**
Length: **9 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students will convert measurements within the same system of measurement in the context of multi-step, real-world problems. Student will work with customary and standard measurement systems, as well as, time. Students will solve real-world problems with measurement conversions. This unit is based on standard 5.M.A

Enduring Understandings

- Multiplication and division are used to convert among different units of measurement.

Essential Questions

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

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Time-line per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 12-1: Convert Customary Units of Length	1 day	Convert customary units of length.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of measurement to convert 1 -yard measurement to inches. **Visual Learning** Visual Learning Bridge- How can you change from one unit of length to another? Convince Me! - Generalize:	Quick Check 12-1 Lesson 12-1 Online Quiz	5.M.A.1 **Mathematical** **Practices** MP.K-12.2 MP.K-12.8

			Explain how to use a mixed number to write an equivalent measurement **Guided Practice** Differentiated Instruction/Centers: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-2: Convert Customary Units of Capacity	1 day	Convert customary units of capacity.	**Problem-Based Learning** Solve and Share – Students find the conversion factor for cups to quarts, and then apply this conversion to find the	Quick Check 12-2 Lesson 12-2 Online Quiz	5.M.A.1 **Mathematical Practices** MP.K-12.2 MP.K-12.8

			number of quarts in 16 cups. **Visual Learning** Visual Learning Bridge- How can you convert customary units of capacity? Convince Me! - Generalize: In a general statement explain how to apply division to convert from pints to quarts. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent:** Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Students construct "Gallon Man" out of construction paper. As a visual aid, each part of the		

			body represents a different capacity. His main body is a gallon, upper arms and legs represent quarts, lower arms and legs represent pints, and each finger and toe for a cup Collect gallon, quart, pint, and cup container. Fill a gallon jug with water. Have students estimate how many quarts, pints, and cups it can fill. Then demonstrate the actual number by filling the containers. Do the same with 2 gallons of water, etc. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-3: Convert Customary Units of Weight	1 day	Convert customary units of weight.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of drawing bar diagrams or writing equations and about converting customary units of length and capacity to convert pounds to inches to solve a word problem. **Visual Learning** Visual Learning Bridge- How can you convert units of weight? Convince Me! - Generalize: Apply prior knowledge about converting between units of weight to generalize about multiplying or dividing when changing pounds to ounces. **Guided Practice** Differentiated Instruction/Centers: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical	Quick Check 12-3 Lesson 12-3 Online Quiz	5.M.A.1 **Mathematical Practices** MP.K-12.4 MP.K-12.6 MP.K-12.8

			Literacy. Advanced: Enrichment **Technology:** Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-4: Convert Metric Units of Length	1 day	Convert metric units of length.	**Problem-Based Learning** Solve and Share – Activate prior knowledge to measure the length of their book in centimeters and millimeters and then look for a relationship between the measurements. **Visual Learning** Visual Learning Bridge- How do you convert metric units of weight? Convince Me! - Critique Reasoning: Explain why a metric conversion is correct or incorrect. **Guided Practice** Differentiated	Quick Check 12-4 Lesson 12-4 Online Quiz	5.M.A.1 **Mathematical Practices** MP.K-12.2 MP.K-12.3 MP.K-12.7

			Instruction/Centers: **Teacher Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment Technology: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-5: Convert Metric Units of Capacity	1 day	Convert metric units of capacity.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of changing from a larger unit to a smaller unit and about multiplying a whole number by a power of 10 to change 4 litters to milliliters. **Visual Learning** Visual Learning Bridge- How can you convert metric units of capacity. Convince Me! - Reasoning: Convert 5 different	Quick Check 12-5 Lesson 12-5 Online Quiz	5.M.A.1 **Mathematical Practices** MP.K-12.2 MP.K-12.7

			measurements to the same unit and use number sense to analyze the list of metric capacity measurements. **Guided Practice** Differentiated Instruction/Centers: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-6: Convert Metric Units	1 day	Convert metric units of mass.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of converting metric units of length and capacity to convert metric units	Quick Check 12-6 Lesson 12-6 Online Quiz	5.M.A.1 **Mathematical Practices**

of Mass			of mass. **Visual Learning** Visual Learning Bridge- How can you convert metric units of mass? Convince Me! - Use Structure: Analyze information, formulate a plan for which operation to use to convert the metric units of mass to determine a solution. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment Technology: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		MP.K-12.1 MP.K-12.7

Lesson 12-7: Convert Units of Time	1 day	Convert units of time.	**Problem-Based Learning** Solve and Share – Students will activate prior knowledge to select common units to compare times. **Visual Learning** Visual Learning Bridge- How can you How do you solve problems that involve different units of time? Convince Me! -Make Sense and Preserver: Explain how to convert time given in both hours and minutes to, to minutes. **Guided Practice** Differentiated Instruction/Centers: **Teacher** **Led:** Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge	Quick Check 12-7 Lesson 12-7 Online Quiz	5.M.A.1 **Mathematical** **Practices** MP.K-12.1 MP.K-12.3

			Closure Lesson Self-Assessment PearsonRealize.com **Optional Activities:** Create a "Units of Time" conversion chart. As it is being written, explain how to use multiplication to change from a larger unit to a smaller unit and use division to change from a smaller to larger. Use Smartboard or a Judy clock as a visual aid Provide students with task cards that provide a description of a meal that is to be prepared and the cooking time for each item of the meal. If all the foods are supposed to be ready at the same time, when does each food need to be started? What if the foods need to be ready at different times?		
Lesson 12-8: Solve Word Problems Using Measure-ment Conversions	1 day	Solve real-world problems with measure-ment conversions.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of perimeter and converting measurements to solve a conversion problem about the perimeter. **Visual Learning** Visual Learning Bridge- How can you convert unites of measurement to solve a problem? Convince Me! - Be Precise: Use numbers sense to find the perimeter of a rectangle when the dimensions of both sides are increased. **Guided Practice** **Differentiated**	Quick Check 12-8 Lesson 12-8 Online Quiz	5.M.A.1 **Mathematical** **Practices** MP.K-12.1 MP.K-12.2 MP.K-12.6

			Instruction/Centers: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent:** Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 12-9: Problem Solving: Precision	1 day	Be precise when solving measure-ment problems.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of measuring to the nearest millimeter to think about the relative precision of a measurement of two different units. **Visual Learning** Visual Learning Bridge- How can you be precise when solving math problems? Convince Me! - Be Precise: Use	Quick Check 12-9 Lesson 12-9 Online Quiz	**Mathematical Practices** MP.K-12.1 MP.K-12.4 MP.K-12.6 5.M.A.1

			appropriate math words, symbols, and unites as well as accurate calculations to compare unites of measurement to solve to a word problem. **Guided Practice** Differentiated Instruction/Centers: **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others

MATH.K-12.4	Model with mathematics
MATH.K-12.6	Attend to precision
MATH.K-12.7	Look for and make use of structure
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.5.M.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.

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.

http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project Activity-Topic 12
    - Tree Houses
        - Technology Standards: 8.1.5.A.3
        - Science and Engineering: 3-5-ETS1-1
    - Our Solar System

        - Technology Standards: 8.1.5.A.3, 8.1.5.A.5
    - Punch
        - Technology Standards: 8.1.5.A.3
    - Florida Panthers
        - Technology Standards: 8.1.5.A.3
        - Science and Engineering: 3-5-ETS1-1

- Envision Stem Project Theme: Grand Canyon. Use the internet and other sources to learn about the Grand Canyon and the Colorado River. Where is the Grand Canyon? How was it formed? What do the different rock layers tell us? Predict how you think the canyon dimensions will change in a million years. Standard: 5-Ess2-1

Unit 8- Write and Interpret Numerical Expressions

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **4 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students will focus on developing understanding of the order of operations and how to use it to evaluate, write and interpret numerical expressions with grouping symbols. This unit is based on standard 5.OA.A

Enduring Understandings

- There is an agreed upon order in which operations are carried out in a numerical expression.
- Numerical expressions show relationships among the quantities involved, which can be interpreted without evaluating the expression.
- Parentheses, brackets, or braces are used to guide the order of operations when simplifying expressions.
- An algebraic expression or equation can be represented in a variety of ways that have the same value.

Essential Questions

- How is the value of a numerical expression found?
- How is the order of an expression determined?
- How can you write a variety of expressions that have the same value?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	**Suggested Timeline per topic**	**General Objectives**	**Instructional Activities**	**Suggested Benchmarks/ Assessments**	**NJSLS**
Lesson 13-1: Evaluate Expressions	1 day	Use the order of operations to evaluate expression.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of performing operations in parentheses first to understand the need for a specific order of operations.* **Visual Learning** Visual Learning Bridge- *What order should you use*	Quick Check 13-1 Lesson 13-1 Online Quiz	5.OA.A.1 Mathematical Practices: MP.3, MP.6

			when you evaluate an expression? Convince Me! - *Construct Arguments: Use prior knowledge of order of operations to provide an argument as to why an expression would or would not change If the braces were removed.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Play a game whereby students work in groups to put number cards in order to make an equation equal the answer card following order of operations. Create a teacher prepared worksheet of expressions that students must place the missing parenthesis the make the equation true.		

			Closure Lesson Self-Assessment *PearsonRealize.com*		
Lesson 13-2: Write Numerical Expressions	1 day	Write simple expressions that show calculations with numbers.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to write a numerical expression to represent a real-world situation.* **Visual Learning** Visual Learning Bridge- *How can you write a numerical expression to record calculations?* Convince Me! - *Reasoning: Compare two different answers to the same order of operations problem and justify reasoning.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure**	Quick Check 13-2 Lesson 13-2 Online Quiz	5.OA.A.2 5.OA.A.1 Mathematical Practices: MP.2, MP4

			Lesson Self-Assessment *PearsonRealize.com*		
Lesson 13-3: Interpret Numerical Expression	1 day	Interpret numerical expressions without evaluating them.	**Problem-Based Learning** Solve and Share – *Use reasoning to interpret a numerical expression.* **Visual Learning** Visual Learning Bridge- *How can you interpret numerical expressions without evaluating them?* Convince Me! - *Reasoning: Compare two expressions and reason that the first one is greater because it has greater addends.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Quick Check 13-3 Lesson 13-3 Online Quiz	5.OA.A.2 Mathematical Practices: MP.3, MP.7
Lesson 13-4:	1 day	Use reasoning to solve problems	**Problem-Based Learning** Solve and Share –Use	Quick Check 13-	Mathematical

Problem Soling: reasoning		by making sense of quantities and relationships in the situation.	reasoning to *write and evaluate numerical expressions and employ reasoning skills to write and evaluate expressions* **Visual Learning** Visual Learning Bridge- *How can you use reasoning to solve a problem?* Convince Me! - *Reasoning: Use the distributive property to write an expression equivalent to 3 x (22+7) and explain why the expressions are equivalent.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	4 Lesson 13-4 Online Quiz	Practices: MP.1, MP.2, MP.4 5.OA.A.1

MATH.K-12.2	Reason abstractly and quantitatively
MATH.5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressi

	with these symbols.
MATH.5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.4	Model with mathematics
MATH.K-12.6	Attend to precision
MATH.K-12.7	Look for and make use of structure

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
  https://www.ixl.com/

- Discovery Education:
  https://google.discoveryeducation.com/

- National Council of Teachers of Mathematics: Contains activities and lessons, and virtual manipulatives organized by strand.
  http://illuminations.nctm.org

- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
  http://nlvm.usu.edu/en/nav/index.html

- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.

http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project-Topic 13
    - The Wreck of Atocha
        - Technology Standards: 8.1.5.A.3, 8.1.5.A.2
        - ELA/Literacy: W.5.3,

- Origin of Games
  - ELA/Literacy: W.5.2
- Proper Procedures
  - Technology Standards: 8.1.5.A.3, 8.1.5.A.2
  - ELA/Literacy: W.5.3, W.5.2

- Envision Stem Project Theme: Food Chains and Food Webs Use the internet and other sources to learn about food chains and food webs. Investigate the role of producers, consumers, and decomposers. Explain how energy form sunlight is transferred to consumers. Standards: 5-PS3-1, 5-LS2-1

Unit 9- Graphing Points on the Coordinate Plane

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **4 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students are introduced to the coordinate plane and learn to plot points in the first quadrant in order to solve real-world problems. Problems include traveling from one point to another and identifying the coordinates of missing points on a line. This unit is based on standard 5.G.A

Enduring Understandings

- Students will understand that the coordinate plane is formed by a horizontal number line, called the x-axis, and a vertical number line, called the y-axis.
- The two axes intersect at a point called the origin (0, 0).
- Points that lie on a line can be connected and extended to solve problems.

Essential Questions

- How are points plotted?
- How are relationships shown on a graph?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 14-1: The Coordinate System	1 day	Locate points on a coordinate grid.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of plotting points on a number line to plot points on a coordinate grid.* **Visual Learning** Visual Learning Bridge- *How do you name a point on a coordinate grid?* Convince Me! - *Reasoning: Interpolate to reason out the height of a plant between two given data points.*	Quick Check 14-1 Lesson 14-1 Online Quiz	5.G.A.1 Mathematical Practices: MP.2, MP.3

			Guided Practice **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Show examples of street maps and discuss. Extend to "coordinate grid" and have students define same in their notes. Also discuss and have students define "axes" and "ordered pairs". **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 14-2: Graph Data Using Ordered Pairs	1 day	Graph points on a coordinate grid.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of graphing points on a coordinate grid to graph vertices of a polygon. Then connect the points to identify the shape drawn based on its properties.* **Visual Learning** Visual Learning Bridge- *How do you graph a point on a coordinate grid?*	Quick Check 14-2 Lesson 14-2 Online Quiz	5.G.A.2 5.G.A.1 Mathematical Practices: MP.2, MP.5

			Convince Me! - *Reasoning: Name the ordered pair that describe the location of a point in relation to another coordinate.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy*. Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Optional Activities:** Using graph paper, or a teacher provided handout, have students draw a coordinate grid and label axes and origin; number same. Model how to plot points on grid. Have students do same ensuring that they move right along the x axis first; then left up the y axis. Have students plot ordered pairs, as well as write ordered pairs based on points plotted on the coordinate grid. **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 14-3: Solve Problems	1 day	Solve real-world problems by graphing points.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge about using rules to extend patterns, and about*	Quick Check 14-2	5.G.A.2

Using Ordered Pairs			*graphing points in a coordinate plane to find the length of a rectangle for a given width.* **Visual Learning** Visual Learning Bridge- *How can you use ordered pairs to solve problems?* Convince Me! - *Look for Relationships: Describe a relationship between the pattern of two terms.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*	Lesson 14-2 Online Quiz	Mathematical Practices: MP.7
Lesson 14-4: Problem Solving: Reasoning	1 day	Problem Solving: Reasoning	**Problem-Based Learning** Solve and Share – *Activate prior knowledge about how to graph points on a coordinate grid and apply reasoning skills to solve problems.* **Visual Learning** Visual Learning Bridge- *How can you use reasoning to solve*	Quick Check 14-3 Lesson 14-3 Online Quiz	Mathematical Practices: MP.1, MP.2, MP.5 5.G.A.2 5.G.A.1

			mathematical problems? Convince Me! - *Make Sense and Persevere: Students justify the reasonableness of their answer; use a graph to find a pattern.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		

MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.K-12.5	Use appropriate tools strategically
MATH.K-12.7	Look for and make use of structure
MATH.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).
MATH.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.

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.
- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illustrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review
- Model various numbers on a hundredths grid or use base ten blocks to demonstrate decimal place value.

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Climate Change Activity

5.G.A.2 Students will continue the conversation regarding climate change and its effect on the reduction in yield of crops. They will view " Harvest and Tillage" linked below from Discovery Education. They will discuss the harvest process. Students will then create a coordinate plane and a situation that involves quadrant 1 and harvesting of crops. For example: "A farm harvests grain each year, and the yield of the harvest is plotted on the coordinate plane." (x = tons of grain, y = the year) (10, 2005) , (7, 2010), (3, 2015), (4, 2020). Students will then ask a series of questions for their partner to answer. Examples may include, "Between which five year period did the sharpest decline of crops yielded occur?" "Between which 5 year period was there an increase in the tons of crops yielded?"

https://google.discoveryeducation.com/learn/videos/0be0bfe3-8cfe-40cb-b989-955d2c3291a3/?embed=false&embed_origin=false

Resources

- Pearson Realize: Math series.
  https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.

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- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
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- The Teaching Channel: Math videos for professional development.
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- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
  http://www.k5mathteachingresources.com

- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Technological Innovations/Use

- IXL

- ST Math

- Kahoot!

- Tools (Envision 2020)

- Game Center (Envision 2020)

- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project-Topic 14
    - Planning Cities
        - ELA/Literacy: W.5.1
    - Game Time!
        - ELA/Literacy: W.5.2
    - Search and Rescue Dogs
        - Technology Standards: 8.1.5.A.3
        - ELA/Literacy: W.5.3, W.5.2
    - Math and Art
        - ELA/Literacy: W.5.4

- Envision Stem Project Theme: Earth's Rotation. Use the internet and other sources to find out more about the Earth's rotation. Investigate why it appears that the Sun is moving across the sky. Design a model to explain Earth's day and/night cycles. Compare Earth's rotation to another planet's rotation. Standard: 5-ESS1-2

Unit 10- Algebra: Analyze Patterns and Relationships

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **4 Days**
Status: **Published**

Summary of the Unit

In this unit of study, students will focus on patterns and relationships in number sequences, tables and graphs. This unit is based on standard 5.OA.B

Enduring Understandings

- Patterns and relationships can be represented numerically, graphically, symbolically, and verbally.
- Spatial relationships can be described using coordinate geometry.
- Patterns, relations, and functions can be recognized and understood mathematically.
- Patterns provide insights into potential relationships.
- The use of algebra requires the ability to represent data in graphs, expression and rules.

Essential Questions

- How can a situation be best represented as an algebraic expression?
- What numerical patterns can be identified in real-life scenarios?
- How can number patterns be analyzed and graphed?
- How can number patterns and graphs be used to solve problems?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 15-1: Numerical Patters	1 day	Analyze numerical patterns.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge from grade 4 to extend and analyze whole-number patters.* **Visual Learning** Visual Learning Bridge- *How can you solve problems involving numerical patterns?* Convince Me! - *Reasoning: Explain reasoning about the*	Quick Check 15-1 Lesson 15-1 Online Quiz	5.OA.B.3 Mathematical Practices: MP.2, MP.3, MP.7

			relationship between the two patterns in terms of the content. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 15-2: More Numerical Patterns	1 day	Use tables to identify relationships between patterns.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of patterns to find a relationship between the patterns in the table.* **Visual Learning** Visual Learning Bridge- *How can you identify relationships between patterns?* Convince Me! - *Generalize: Generalize and explain why a pattern extends beyond the data provided.* **Guided Practice** **Differentiated Instruction/Centers:**	Quick Check 15-2 Lesson 15-2 Online Quiz	5.OA.B.3 Mathematical Practices: MP.2, MP.7, MP.8

			Teacher Led: Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **<u>Optional Activity:</u>** Students should describe the coordinates of points and the relationship of the coordinate plane to the number line. Have students generate and identify relationships in numerical patterns using the coordinate planes as a way of representing these relationships and patterns. 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 students should be able to explain that the terms in one sequence are twice the corresponding terms in the other sequence. **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 15-3: Analyze and Graph Relationships	1 day	Analyze patterns, and graphs ordered pairs generated from number sequences.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge to complete a table that shows a pattern and then use the table to generate a graph and ordered pairs.* **Visual Learning**	Quick Check 15-3 Lesson 15-3 Online Quiz	5.OA.B.3 5.G.A.2 Mathematical Practices: MP.2, MP.7, MP.8

			Visual Learning Bridge- *How can you generate and graph numerical patterns?* Convince Me! - *Make Sense and Preserver: Explain what the origin (0, 0) represents in terms of the situation.* **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		
Lesson 15-4: Problem Solving: Make Sense and Preserve	1 day	Make sense of problems, and persevere in solving them.	**Problem-Based Learning** Solve and Share – *Activate prior knowledge of extending patterns, graphing points, and connecting the points to solve problems.* **Visual Learning** Visual Learning Bridge- *How can you make sense of a problem and preserver in solving it?* Convince Me! - *Make Sense and Preserver: Students justify the reasonableness of their answer; uses rules correctly to complete a*	Quick Check 15-4 Lesson 15-4 Online Quiz	Mathematical Practices: MP.1, MP.2, MP.5 5.OA.B.3

			table and graph. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led:** Intervention: *Reteach to Build Understanding.* On-Level: *Build Mathematical Literacy.* Advanced: *Enrichment* **Technology:** Practice Buddy *(PearsonRealize.com)* **Independent:** *Independent Practice & Problem Solving* **Additional Activities:** Math Games: *PearsonRealize.com* Visual Learning Animation Plus: *PearsonRealize.com* Additional Practice Math Anytime: *Daily Review and* *Today's Challenge* **Closure** Lesson Self-Assessment *PearsonRealize.com*		

MATH.K-12.1	Make sense of problems and persevere in solving them
MATH.K-12.2	Reason abstractly and quantitatively
MATH.K-12.3	Construct viable arguments and critique the reasoning of others
MATH.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.
MATH.K-12.7	Look for and make use of structure
MATH.K-12.8	Look for and express regularity in repeated reasoning
MATH.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.

Resources

- Pearson Realize: Math series.

https://www.pearsonrealize.com/index.html#/

- ST Math: A visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving to engage, motivate and challenge PreK-8 students toward higher achievement.
  https://www.stmath.com/

- IXL: Online learning, offering unlimited algorithmically generated questions, real-time analytical reports, and dynamic scoring to encourage mastery.
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- Discovery Education:
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- The National Library of Virtual Manipulatives: Offers tutorials and virtual manipulatives for the classroom.
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- The Teaching Channel: Math videos for professional development.
  http://www.theteachingchannel.org

- K-5 Math Teaching Resources: Contains free math teaching resources, games, activities and journal tasks.
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- Open Middle: Challenging math problems.
  http://www.openmiddle.com/

- K-5 math Teaching Resources:
  https://www.k-5mathteachingresources.com/

- Which One Doesn't Belong: Thought-provoking puzzles.
  http://wodb.ca/index.html

- Estimation 180: Provides estimation challenges.
  http://wodb.ca/index.html

Suggested Modifications for Special Education, ELL and Gifted Students

*Consistent with individual plans, when appropriate.

Gifted Students

- Complete above grade level work on IXL.
- Solve challenging math problems by standard. http://www.openmiddle.com/.
- Create a Math Board on Discovery Education.
- Design an Anchor Chart for the classroom.

- Create a math game, escape room or puzzle supporting the unit of study.
- Write and illuatrate math story to support the unit of study.

Special Education Students

- Fluency review Activity
- Vocabulary Review
- Model various numbers on a hundredths grid or use base ten blocks to demonstrate decimal place value.

English Language Learners

- Topic Vocabulary
- Visual Learning Bridge: Reading
- Solve & Share: Speaking

Suggested Technological Innovations/Use

- IXL
- ST Math
- Kahoot!
- Tools (Envision 2020)
- Game Center (Envision 2020)
- Create/Complete a Discovery Education Board

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

- Pick a Project-Topic 15
    - The Wreck of Atocha
        - Technology Standards: 8.1.5.A.3, 8.1.5.A.2
        - ELA/Literacy: W.5.3,
    - Origin of Games
        - ELA/Literacy: W.5.2
    - Proper Procedures
        - Technology Standards: 8.1.5.A.3, 8.1.5.A.2
        - ELA/Literacy: W.5.3, W.5.2

- Envision Stem Project Theme: Analyze Patterns. Use the internet and other sources to find patterns in cities and building in other parts of the world. Standard: 3-5-ETS1-1.

Unit 11- Geometric Measurement: Classify Two-Dimensional Figures

Content Area: **Mathematics**
Course(s): **5th Grade Mathematics**
Time Period: **3rd Trimester**
Length: **4 Days**
Status: **Published**

Summary of the Unit

In this unit of study, student will focus on understanding that the attributes belonging to a category of two-dimensional shapes also belong to all subcategories of that category. This unit is based on standard 5.G.B

Enduring Understandings

- Triangles and quadrilaterals are classified by their sides and their angles.
- Good math thinkers use math to explain why they are right.
- Good math thinkers can talk about the math that others do.

Essential Questions

- What is the relationship of the different measures in two-dimensional figures?
- How does a change in one dimension of a figure affect the other dimensions?
- How can we use our knowledge of the properties shared by two-dimensional figures to solve real-life problems?

Summative Assessment and/or Summative Criteria

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

- Topic Test
- Performance Task

Unit Plan

Topic/ Selection	Suggested Timeline per topic	General Objectives	Instructional Activities	Suggested Benchmarks/ Assessments	NJSLS
Lesson 16-1: Classify Triangles	1 day	Classify triangles by their angles and sides.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of angle measures and types of triangles to classify triangles according to their angles and sides. **Visual Learning** Visual Learning Bridge- How	Quick Check 16-1 Lesson 16-1 Online Quiz	5.G.B.3 5.G.B.4 Mathematical Practices: MP.1, MP.2., MP.3

			can you classify triangles? Convince Me! - Construct Arguments: Use any method to determine whether an equilateral triangle can also be a right triangle, and then explain the reasoning. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activities:** Provide each student with a set of toothpicks. Students will make a triangle by arranging any number of toothpicks end-to-end (sides may be made from 3, 3, and 4 toothpicks or 1, 1, and 2		

			toothpicks, and so on.) Have student identify each triangle **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 16-2: Classify Quadrilaterals	1 day	Classify quadrilaterals by their properties.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of classifying triangles to classify quadrilaterals. **Visual Learning** Visual Learning Bridge- What are some properties of quadrilaterals? Convince Me! - Generalize: Compare two special quadrilaterals and explain how they are different and similar. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus:	Quick Check 16-2 Lesson 16-2 Online Quiz	5.G.B.3 5.G.B.4 Mathematical Practices: MP.2, MP.6., MP.8

			PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Create a Venn diagram to compare and contrast various types of quadrilaterals. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 16-3: Continue to Classify Quadrilaterals	1 day	Classify quadrilaterals using a hierarchy.	**Problem-Based Learning** Solve and Share – Activate prior knowledge to classify quadrilaterals into multiple categories. **Visual Learning** Visual Learning Bridge- How are special quadrilaterals related to each other? Convince Me! - Construct Arguments: Use prior knowledge about categories of quadrilaterals to determine whether a rectangle can be a rhombus, or whether a rhombus can be a rectangle. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment	Quick Check 16-3 Lesson 16-3 Online Quiz	5.G.B.3 5.G.B.4 Mathematical Practices: MP.2., MP.3

			Technology: Practice Buddy (PearsonRealize.com) **Independent**: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Optional Activity:** Create a hierarchy poster. Label and define each quadrilateral on the poster. **Closure** Lesson Self-Assessment PearsonRealize.com		
Lesson 16-4: Problem Solving Construct Arguments	1 day	Construct arguments about geometric figures.	**Problem-Based Learning** Solve and Share – Activate prior knowledge of the properties of triangles and quadrilaterals to construct arguments about geometric figures. **Visual Learning** Visual Learning Bridge- How can you construct arguments? Convince Me! - Construct Arguments: Use counterexamples to construct clear and complete arguments using mathematical terms, definitions, symbols, objects,	Quick Check 16-4 Lesson 16-4 Online Quiz	Mathematical Practices: MP. 1, MP2., MP.3 5.G.B.3 5.G.B.4

			actions, drawings, and diagrams correctly. **Guided Practice** **Differentiated Instruction/Centers:** **Teacher Led**: Intervention: Reteach to Build Understanding. On-Level: Build Mathematical Literacy. Advanced: Enrichment **Technology**: Practice Buddy (PearsonRealize.com) Independent: Independent Practice & Problem Solving **Additional Activities:** Math Games: PearsonRealize.com Visual Learning Animation Plus: PearsonRealize.com Additional Practice Math Anytime: Daily Review and Today's Challenge **Closure** Lesson Self-Assessment PearsonRealize.com		

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Cross Curricular/21st Century Connections

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- Pick a Project-Topic 16
    - The Great Pyramid
        - Technology Standards: 8.1.5.A.3
    - Blueprints
        - Science and Engineering: 3-5-ETS1-1
    - Maps
        - Technology Standards: 8.1.5.A.1
    - State Flags
        - Technology Standards: 8.1.5.A.1
- Envision Stem Project Theme: Ecosystems. Use the internet and other sources to learn more about ecosystems. Look for examples of changes that living organisms might cause. List three different ecosystems and describe any changes that humans might have made to each one. Standard: 5-LS2-1