Fourth Grade Math

Units of Study * all instructional days include 1 extra day to assess REVEAL Units of Study	
Math Connect	Daily Skill Practice
Unit 1	Unit Math is Mine (10 days) **August 15th- August 29th**
Unit 2	Generalize Place-Value Structure (8 days) **August 30th-September 12th**
Unit 3	Addition and Subtraction Strategies and Algorithms (15 days) **September 13th-October 4th**
Unit 4	Multiplication as Comparison (8 days) **October 5th-October 17th**
Unit 5	Numbers and Patterns (10 days) **October 18th-November 3rd**
Unit 6	Multiplication Strategies with Multi-Digit Numbers (14 days) **November 9th-December 2nd**
Unit 7	Division Strategies with Multi-Digit Dividends and 1-Digit Divisors (14 days) **December 5th-January 9th**
Unit 8	Fraction Equivalence (12 days) **January 10th-January 27th**
Unit 9	Addition and Subtraction Meanings and Strategies with Fractions (10 days) **January 30th-February 13th**
Unit 10	Addition and Subtraction Strategies with Mixed Numbers (10 days) **February 14th-March 1st**
Unit 11	Multiply Fractions by Whole Numbers (9 days) **March 2nd-March 15th**
Unit 12	Decimal Fractions (9 days) **March 16th-April 4th**
Unit 13	Units of Measurement and Data (19 days) **April 5th-May 3rd**
Unit 14	Geometric Figures (18 days) **May 4th-May 24th ***Short 3 days****

			Units													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
NS		1		x												
		2		x			x									
		3								x						
		4								x						
		5								x						
		6												x		
		7												x		
		8					x									
		9		x				x	x							
C		1			x				x							
		2						x								

		3					x									
		4				x										
		5							x							
		6								x						
		7			x	x										
AT		1		x												
		2			x		x	x								
		3			x											
		4			x											
		5							x							
		6				x								x		
G		1													x	
		2													x	
		3													x	
		4													x	
		5													x	
M		1												x		
		2												x		
		3											x	x		
		4												x		
		5													x	
		6													x	
DA		1												x		
		2												x		
		3												x		

Unit 1- **Math Is……. August 15th -29th**

General Description of the Unit	
General Description of the Unit To build students' agency, proficiency, and understanding of mathematics and understand that math is not just something done in school.	

Priority Standards	Supporting Standards
Priority Standards ❏ Sense-Making Routines ❏ Notice and Wonder	**Supporting Standards** ❏ 3.NS.3.Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.] **Lesson 1 and 2** ❏ 3.NS.6 Understand two fractions as equivalent (equal) if they are the same size, based on the same whole or the same point on a number line. **Lesson 3 and 5** ❏ 3.C.4 Interpret whole-number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each). **Lesson 4** ❏ 3.AT.2 - Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). **Lesson 6** **Proficiency Scales**
Indiana Process Standards for Mathematics ☐ **P.S. 1**Make sense of problems and persevere in solving them. ☐ **P.S. 3**Construct viable arguments and critique the reasoning of others.	**SEL Indicators** ☐ Students describe their feelings and attitudes toward mathematics. ☐ Students recognize when they feel frustration during math class.

☐ **P.S. 2** Reason abstractly and quantitatively. ☐ **P.S. 4** Model with mathematics ☐ **P.S. 5** Use appropriate tools strategically ☐ **P.S. 6** Attend to precision. ☐ **P.S. 7** Look for and make use of structure. ☐ **P.S. 8** Look for and express regularity in repeated reasoning	☐ Students show appreciation for the different perspectives of their classmates. ☐ Students practice showing respect for classmates as they share ideas and thinking. ☐ Students practice self-control as they learn to take turns when sharing ideas with a partner or in a group. ☐ Students make decisions about classroom norms for working productively with classmates.

Enduring Understandings	**Essential Questions**
❏ Students understand that we each have strengths and weaknesses in math. Students explore the role of math in our lives. ❏ Students demonstrate understanding of the problem solving process, with a focus on making sense of a problem and determining a solution plan. ❏ Students demonstrate understanding of how real-world situations and problems can be modeled with mathematics. ❏ Students demonstrate understanding of the importance of supporting their solutions and ideas with viable arguments and responding constructively to the arguments.	❏ What does it mean to do math? ❏ What do you notice? ❏ What do you wonder? ❏ What superpowers do you think the children have? Are their superpowers the same or different? ❏ How do superheroes work together? How do they help each other when trying to solve a problem? ❏ In what ways can real people have superpowers? ❏ What are some of your superpowers? ❏ Can someone have superpowers in math? ❏ What do you notice about the fruit? ❏ How do the different apple slices relate to each other? ❏ What different fractional parts can you see in the square? ❏ How could you show the same fractional parts for each square? ❏ What are some other ways to show the coins? ❏ Are there other ways to show the coins in equal rows? ❏ What do you notice about any of the size of the pieces? ❏ What might be some ways to determine the relationships among the pieces?

Key Concepts - I Can:		**Related Concepts**	**Assessment Vocabulary**
● I can identify my strengths in math.		●	**Math Terms:** dimensions rectangular model

● I can recognize that we all have math superpowers. ● I can make sense of a problem and represent it in different ways. ● I can explain different ways to think about numbers. ● I can construct an argument to explain my thinking. ● I can explain my thinking with clear and appropriate terms. ● I can use patterns to develop efficient strategies to solve problems. ● I can explain why patterns are useful to solve problems. ● I can describe the behaviors and attitudes that support a productive classroom learning environment. ● I can describe the mindsets that help me problem solve.			estimate exact **Academic Terms:** interview strength analyze visualize critique defend precise efficient generalize generalization norms promise respectful

<u>**Digital Resources**</u>	<u>**Manipulatives/Materials**</u>	<u>**Digital**</u>
☐ Interactive Student Edition ☐ Math Replay Videos	☐ blank paper ☐ colored pencils	

☐ eToolkit ☐ eGlossary ☐ Interactive Spiral Review ☐ Digital Games Library	☐ crayons and markers ☐ fraction strips ☐ Fractional Parts of the Whole Teaching Resource. ☐ Which Is It? Teaching Resource ☐ Tangram pieces	

Unit 2- Generalize Place-Value Structure (8 days) **August 30th-September 12th**

General Description of the Unit

Students extend their understanding of base-ten place-value structure to multi-digit numbers within one million. They analyze the relationships between the value of digits in consecutive positions in 3-digit numbers and find relationships between 4 and 5 digit numbers. They notice that just as 100 is 10 times 10, a digit in any place in a number has 10 times the value of the same digit in the place to the right. Students explore the three-position periods and define our base-ten number system and explain the names of different positions.

Priority Standards	Supporting Standards
❏ **4.NS.1** Read and write whole numbers up to 1,000,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.	☐ **4.NS.2** Compare two whole numbers up to 1,000,000 using >, =, and < symbols. ☐ **4.NS.9** Use place value understanding to round multi-digit whole numbers to any given place value

Proficiency Scales	Tiered Assessments

Enduring Understandings	Essential Questions
● Students extend their understanding of place value by learning that a digit in one place represents ten times what it represents in the place to its right. (Lesson 2-1). ● Students extend their understanding of place value as they read and write multi-digit whole numbers (Lesson 2-2).	☐ How can I use place value to work with multi-digit numbers? ☐ What do we already know about place value? (Lesson 2-1) ☐ How can we describe the relationship among the digits in a 3 digit number? (Lesson 2-1) ☐ What can you tell me about this picture in crowd of people? (Lesson 2-2)

● Students extend their understanding of place value as they compare two multi-digit numbers (Lesson 2-3). ● Student build on their understanding of place value to make decisions about how exact an estimate needs to be. (Lesson 2-4).	☐ Do you think there are more than 10,000 people in the crowd? More than 100,000 people? Explain your reasoning. (Lesson 2-2) ☐ How many people do you think are in the crowd? Why did you choose that number? (Lesson 2-2) ☐ What do you think this number would look like when you write it down? (Lesson 2-2) ☐ What do you notice about these numbers? (Lesson 2-3) ☐ What do the numbers have in common? What is different about the numbers? (Lesson 2-3) ☐ What are some other ways you can represent each of these numbers? (Lesson 2-3) ☐ How can you use place value to reach each of these numbers? (Lesson 2-3) ☐ What could be the exact number of visitors to the museum? What evidence can you give to support your thinking?(Lesson 2-4) ☐ What could explain the different estimates from the two directors? (Lesson 2-4) ☐ Let's think of a situation in which the 40,000 estimate would be preferred and another situation in which the 35,000 estimate would be better? (Lesson 2-4) ☐ When might a greater value be useful? When might a lesser value be useful? (Lesson 2-4)

Key Concepts - I Can:	Related Concepts	Assessment Vocabulary
❏ I can use place value to determine the value of a digit. ❏ I can identify relationships between the values of digits. ❏ I can read and write greater numbers in word form, standard form, and expanded form.		**Math:** ● base-10 number system digit ● expanded form ● period ● standard form ● word form ● digit ● value

		● halfway point
❏ I can explain how to use place-value structure to read and write greater numbers. ❏ I can compare two multi-digit numbers based on the value of the digits in each place. ❏ I can use >,=, and < symbols to record the results of comparisons. ❏ I can round multi-digit numbers to any place. ❏ I can explain why rounding multi-digit numbers is useful.		● round **Academic:** ● generalize ● notice ● represent ● conjecture ● estimate ● explain ● justify

Mathematical Processes

☐ **P.S. 7** Look for and make use of structure. (Lesson 2-1 and Lesson 2-2)

☐ **P.S. 3** Construct viable arguments and critique the reasoning of others. (Lesson 2-1)

☐ **P.S. 5** Use appropriate tools strategically (Lesson 2-2, 2-3, and 2-4)

☐ **P.S. 2** Reason abstractly and quantitatively. (Lesson2-3)

☐ **P.S. 6** Attend to precision. (Lesson 2-4)

Resources

SEL Learning Objective:	Digital VIDEOS	Manipulatives/Materials
☐ **Self-Managment-Self-Motivation** (Lesson 2-1) Students who self-motivate can take initiative and persevere through challenging tasks. ☐ **Relationship Skills-Communication** (Lesson 2-2) Student who can communicate effectively are more likely to build strong relationships and contribute to a positive classroom culture.	● **"Adding 3 numbers using Place Value"** ● **"Adding 3 numbers Using Place Value (regrouping)"** ● **Models for Addition and Subtraction Video 1** ● **Models for Addition and Subtraction Video 2** ● **Comparing Numbers (>,<,=) Introduction** ● **Online list of Place Value Activities/Games**	● Base-ten blocks ● Place-Value Chart to Millions Teaching Resource ● Index cards ● Place-Value Chart with Periods Teaching Resource ● Number Cards 0-10 Teaching Resource ● Number cubes ● Estimation Cards Teaching Resource

☐ **Self-Awareness-Self-Confidence** (Lesson 2-3) Self-confident students are more willing to take risks, allowing them to learn from mistakes. ☐ **Social Awareness-Develop Perspective** (Lesson 2-4) Developing perspective can ehlp student understand different ways of thinking.	● [Printable Place Value Disks](#) (FREE download)	● Blank Number Lines Teaching Resource

Unit 3- Addition and Subtraction Strategies and Algorithms (15 days) **September 13th-October 4th**

General Description of the Unit
Estimation, Addition, and Subtraction
In this unit, students will estimate sums, making use of strategies such as rounding, front-end estimation, and compatible numbers while building on their understanding on the uses and reasonableness of estimation. Students will also extend strategies they previously learned for adding and subtracting up to 3-digit numbers to adding and subtracting up to 6-digit numbers. Students will become fluent with adding and subtracting using vertical algorithms, commonly referred to as standard algorithms.

Priority Standards	Supporting Standards
4.AT.1 Solve real world problems Solve real-world problems involving addition and subtraction of multi-digit whole numbers.	**4.C.1** Add and subtract multi-digit whole numbers fluently using the standard algorithm approach.
	Tiered Assessments

Enduring Understandings
- Students build on their understanding of estimation to estimate sums and differences of multi digit numbers.
- Students expand their understanding of addition strategies to add multi digit numbers.
- Students expand their understanding of subtraction strategies to add multi digit numbers.
- Students build an understanding of solving multi-step problems by representing them with bar diagrams and equations.
- Students extend their understanding of solving a multi-step problems involving addition and subtraction

Essential Questions
To FIND essential questions, please reference yout TE for each lesson under the sections titled:
- Number Routine - Decompose It
- Pose Purposeful Questions
- Establish Goals to Focus Learning

NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	Related Concepts	Assessment Vocabulary
- I can use appropriate addition and subtraction algorithms involving multi-digit numbers to solve problems..	-	**Math Terms:** - **estimate** - **front end estimation** - **round** - **decompose**

● I can decompose multi-digit numbers using place value to solve addition or subtraction problems.. ● I can use estimates to help me detrimen whether my answers are correct or make sense. ● I can explain how an addition or subtraction algorithm works.		● **partial sum** ● **algorithm** ● **regroup** ● **difference** ● **variable** ● **multi step strategies** **Academic Terms:** ● **reasonable** ● **strategy** ● **focus** ● **scan** ● **consider** ● **effictly** ● **indicate** ● **logical** ● **prove** ● **valid** ● **check** ● **modify** ● **clarify** ● **represent** ● **correspond** ● **process**

Mathematical Processes
- Make sense of problems and persevere in solving them.
  - o Build new mathematical knowledge through problem solving.
- Look for and express regularity in repeated reasoning
  - o Self-assess to see whether a strategy makes sense as I work.
- Reason abstractly and quantitatively
- Model with mathematics
- Look for and make use of structure
- Construct viable arguments and critique the reasoning of others

Resources		
Textbook **15 days for this unit plus 1 day for unit assessment…**	**Digital**	**Manipulatives** ● coins ● number cubes

Lesson 3-1 / 1 day
Lesson 3-2 / 2 days
Lesson 3-3 /1 day
Lesson 3-4 / 2 days
Lesson 3-5 / 2 days
Lesson 3-6 / 1 day
Lesson 3-7 / 2 days
Lesson 3-8 / 2 days
Lesson 3-9 / 2 days
Unit Assessment / 1 day
		● base ten blocks
		● index cards
		● spinner
		Teaching resources
		   ○ *show and explain strategies*
		   ○ *Place value chart to 1 million*
		   ○ *open number line*
		   ○ *bar diagram*

Unit 4- Multiplication as Comparison (8 days) October 5th-October 17th

General Description of the Unit
Multiplicative Comparison Students use multiplication and division to translate phrases such as times as many and times as much to find the total or unknown factors in problems. They recognize that these kinds of phrases are associated with multiplicative comparisons. One commonly used representation for such comparisons is a bar diagram.

Priority Standards	Supporting Standards
4.AT.3 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.	**4.AT.2** Recognize and apply the relationships between attrition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real world and other mathematical problems.

Proficiency Scales	Tiered Assessments

Enduring Understandings	Essential Questions
- Students use their knowledge of multiplication to understand and represent multiplicative comparison statements. - Students can distinguish between additive comparison and multiplicative comparison. - Students can solve division problems using their understanding of multiplicative comparisons.	To FIND essential questions, please reference yout TE for each lesson under the sections titled: - Number Routine - Decompose It - Pose Purposeful Questions - Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL	Assessment Vocabulary
- I can use multiplication to compare quantities. - I can explain how to use multiplicative comparison statements to explain the relationship between quantities. - I can show how to solve comparison word problems using multiplication and addition. - I can explain the difference between multiplicative	- Students demonstrate self awareness of personal strengths and areas of challenge in mathematics. - Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal. - Students practice strategies for persisting at a mathematical task such as setting a small goal or setting times for remaining focused.	**Math Terms:** - multiplicative comparison - additive comparison - bar diagram - unknown **Academic Terms:** - represent - state - between - distinguish - indicate - consider - vary - correspond

comparison problems and additive comparison problems ● I can represent word problems involving multiplicative comparison using bar diagrams and multiplication equations. ● I can use multiplication to solve word problems involving multiplicative comparisons. ● I can represent word problems involving multiplicative comparison using division equations and bar diagrams. ● I can use division to solve word problems involving multiplicative comparison.	● Students identify problems and use creativity to execute problem solving steps and identify multiple solutions.	● suppose

Mathematical Processes
- *PS.2 Reason abstractly and quantitatively.*
    - o Determine the meaning of symbols, key terms, and other mathematical words or phrases and how they contribute to the solution pathway.
- *PS.3 Construct convincing arguments and critique the reasoning of others.*
    - o Justify my reasoning for my solution making sense

Resources		

| **Textbook**
8 days for this unit plus 1 day for unit assessment…

Lesson 4-1 / 2 days
Lesson 4-2 / 2 days
Lesson 4-3 / 2 days
Lesson 4-4 / 2 days
Unit Assessment / 1 day | **Digital** | **Manipulatives**
● connecting cubes
● counters
● number cubes
● base ten blocks
● two color counters
● index cards
Teaching resources
● number cards from 0 - 10 |

Unit 5-Numbers and Patterns (10 days) October 18th-November 3rd

Numbers and Number Patterns In this unit, students will use their understanding of multiplication to decompose a number into factor pairs. They use a systematic approach to find all factor pairs of a whole number. They recognize that factor pairs of a number can be used to classify a number as prime or composite. They explore the relationship between factors and multiples and use this relationship to determine multiples of a given number. Students examine shape and number patterns and write pattern rules to describe the patterns. They recognize that patterns behave in different ways and understand how the pattern rule dictates what a pattern looks like. Students use pattern rules to extend and generate a sequence of numbers or shapes. They will use their understanding of factors, multiples, and arithmetic patterns to analyze patterns and explain features of the pattern that are not clearly stated in the pattern rule.

Priority Standards	**Supporting Standards**
4.NS.8 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its tractors. Determine whether a given whole number in the orange 1-100 is a multiple of a given one digit number.	4.C.7 Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Understand and use the distributive property. 4.AT.6 Describe a relationship between two variables and use it to find a second number when a first number is given. Generate a number pattern that follows a given rule.
Proficiency Scales	**Tiered Assessments**
Enduring Understandings - Students use their knowledge of factor pairs to develop an understanding of prime and composite numbers - Students extend your understanding of multiplication to determine the multiples of a number - Students reason about shape and number patterns to identify a pattern rule - Students use your understanding of numeric and shape patterns to generate a pattern from a given rule - Students use their understanding of arithmetic patterns to identify and explain features of a pattern - Students build fluency with multiples and a arithmetic patterns as they analyze patterns for features	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: - Number Routine - Decompose It - Pose Purposeful Questions - Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL	Assessment Vocabulary
- I can determine prime factors - I can explain how to find all factor pairs of a number - I can identify a whole number as a prime or composite number - I can find multiples of whole numbers in a range of 1 to 100 - I can recognize, extend, and describe a number or shape pattern - I can generate a number or shape pattern from a given rule - I can identify and explain features of a number or shape pattern	- Students recognize personal strengths through thoughtful self-reflection. - Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal. - Students exchange ideas for mathematical problem-solving with a peer, listening attentively and providing thoughtful and constructive feedback. - Students demonstrate thoughtful reflection through identifying the causes of challenges and successes while completing a mathematical task. - Students develop and execute a plan, including selecting tools for mathematical problem solving. - Students reflect on and describe the logic and reasoning used to make a mathematical decision or conclusion.	**Math Terms** - factor - factor pairs - composite number - prime number - multiple - product - pattern - pattern rule - sequence - term **Academic Term** - predict - Process - categorize - state - notice - reasonable - examine - represent - assess - prediction

Mathematical Processes
- *PS.3 Construct convincing arguments and critique the reasoning of others.*
    - Write a plan, using appropriate reference materials, to solve a given problem.
- *PS.4 Model with mathematics.*
    - Select, apply, and translate among a variety of mathematical representations to solve problems.
    - Look for and make use of structure
    - Look for an Express regularity in repeated reasoning
    - Use appropriate tools to teach strategically

Resources		
Textbook	**Digital**	**Manipulatives** - color tiles - index cards

10 days are allotted for this unit - plus one day for the Unit Assessment: Lesson 5-1 / 2 days Lesson 5-2 / 1 day Lesson 5-3 / 1 day Lesson 5-4 / 2 days Lesson 5-5 / 2 days Lesson 5-6 / 2 days Unit 5 Assessment - 1 day		● paper clips ● connecting cubes ● counters (lessons 2 and 6) ● grid paper ● index cards #ed 1-100 ● inflatable ball with #1-100 written on it ● white boards + markers ● counters in different colors (lessons 4 and 5) ● pattern blocks ● multicolored tiles ● craft sticks

Unit 6-Multiplication Strategies with Multi-Digit Numbers (14 days) **November 9th-December 2nd**

General Description of the Unit
Multiplication Strategies with Multi-Digit Numbers In this unit, students will use multiplication strategies to multiply multi-digit numbers. They will apply decomposition of numbers and the Distributive Property of Multiplication to create area

models and find partial products used to calculate a product. Actual products will be compared to estimated products to determine whether or not the solution is reasonable. Students will also use an understanding of place value, properties of operations, and decomposition of factors to multiply multiples of 10. Finally, students will apply what they have learned to solve multi-step word problems involving multiplication of multi-digit factors

Priority Standards	Supporting Standards
● 4.C.2 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning.	● 4.AT.2 Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems. ● 4.NS.2 Compare two whole numbers up to 1,000,000 using >, =, and < symbols. ● 4.NS.9 Use place value understanding to round multi-digit whole numbers to any given place value. ● 4.C.7 Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Understand and use the distributive property. ● 4.AT.1 Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
Proficiency Scales	**Tiered Assessments**
Enduring Understandings ● Students extended their understanding of multiplication using place value relationships and properties of operations to multiply by multiples of 10, 100, 1,000 ● Students develop an understanding of how to estimate products using different strategies	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: ● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

- Students are introduced to the distributive property with the use of a raised to build an understanding of how the properly works
- Students develop an understanding of partial products as they use representations and the distributive property to find the product of 2 digit in 1 digit Factors.
- Students extend their understanding of place value to decompose numbers and use area model to find partial products
- Students extend their understanding of place value and properties of operations to find products of 2 multiples of 10
- Students develop an understanding of multiplying to 2 digit factors by using an area model to represent the equation
- Students extend their understanding of multiplication by representing multi-step problems involving multiplication

Key Concepts - I Can:	SEL	Assessment Vocabulary
- I can identify patterns of 0 that exist in products of 1 digit numbers and multiples of 10, 100, and 1000 - I can use rounding and compatible numbers to estimate products - I can explain how to estimate products by using different estimation strategies	- Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical ideas bold by others - Students set a focus mathematical goal to make a plan for achieving that goal - Students recognized and work to understand the emotions of others and practice empathetic responses	**Math Terms:** - Associative property of multiplication - Compatible numbers - Rounding - Decompose - Distributive property - Factor - Product - Area model - Partial products - Multiple

● I can use the distributive property of multiplication to multiply two numbers ● I can explain how to use the distributive property of multiplication to find products ● I can find partial products of multiple 2 digit by 1 digit factors ● I can explain how to use partial products to multiply two digit by 1 digit factors ● I can find partial products to multiply three digit and four digit factors by 1 digit factors ● I can explain how to use partial products to multiply three digit and four digit factors by 1 digit factors ● I can identify patterns that existing products of 2 digit multiples of 10 ● I can find partial products to multiply two digit factors ● I can describe how to use partial products to multiply to 2 digit factors ● I can solve multi-step word problems involving multiplication by representing these problems using equation with a variable to represent the unknown	● Students discuss and practice strategies for managing stressful situations ● Students use prior knowledge and new understanding of mathematical Concepts to complete a task, building stronger self-efficacy ● Students discuss the value of hearing a different viewpoints and approaches to problem-solving	● Variable **Academic Terms:** ● Notice ● Represent ● Utilize ● Accurate ● Focus ● Method ● Develop ● Logical ● Clarify ● Opposed ● Reasonable ● Represent ● Examine ● Recognize ● Check

Mathematical Processes
● *PS.8 Look for and express regularity in repeated reasoning.*
  ○ Notice if calculations are repeated and use that information to solve problems.

- *Make sense of problems and persevere in solving them*
  Analyze and evaluate the mathematical thinking and strategies of others.
    - Reason abstractly and quantitatively
    - Use appropriate tools Strategically
    - Look for and make use of structure
    - Make sense of problems and persevere in solving them
    - Model with mathematics
    - Construct a viable arguments and critique the reasoning of others

Resources

Textbook	Digital	Manipulatives
14 days are allotted for this unit - plus one day for the Unit Assessment: Lesson 6.1-1 day Lesson 6.2-1 day Lesson 6.3-2 days Lesson 6.4-2 days Lesson 6.5-2 days Lesson 6.6-1 day Lesson 6.7-2 days Lesson 6.8-3 days		- Base ten blocks - Index cards - Number cubes - Color tiles - Counters in two colors - Grid paper - Graph paper Teacher Resources: - Multiplication facts table

Unit 7-Division Strategies with Multi-Digit Dividends and 1-Digit Divisors (14 days) **December 5th-January 9th**

General Description of the Unit

Division Strategies with Multi-Digit Dividends and 1-Digit Div In this unit, students will use their understanding to find whole number quotients and remainders with up to 4-digit dividends and 1-digit divisors. Students will extend their understanding of using compatible numbers to estimate products to using compatible numbers to estimate quotients. Students will also apply their prior understanding of using partial products and area models to find products of multi-digit numbers to using area models and partial quotients to divide with multi-digit numbers. Students will begin the unit by using different strategies to divide multiples of 10, 100, and 1,000 by 1-digit divisors. At the end of the unit, students will interpret remainders in the context of a given problem and solve multi-step problems involving quotients and remainders.

Priority Standards	Supporting Standards
● **4.C.3** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning.	● 4.AT.2 Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems. ● 4.NS.9 Use place value understanding to round multi-digit whole numbers to any given place value. ● 4.AT.1 Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). ● 4.C.1 Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach.
Proficiency Scales	**Tiered Assessments**
Enduring Understandings ● Decrease identify patterns and use different strategies to divide multiples of 10, 100, and 1000 ● Do not extend their understanding of division as they used compatible numbers to estimate quotients ● Student extender understanding of division by using the equal share in meaning of division to divide a 2-digit number by a one-digit divisor	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: ● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

- Students build understanding of the partial quotient strategy to divide
- Students build understanding of dividing multiple digit dividends by 1 digit divisors using the partial quotient strategy and area models
- Build understanding of how to identify ocean and remainders and explain what the remainder means
- Students divide and determine how to interpret the remainder in a division problem based on the problem situation
- Students explain how to use division strategies to solve real-world problems

Key Concepts - I Can:	SEL	Assessment Vocabulary
- I can divide multiples of 10, 100, or 1,000 by using the relationship between multiplication and division and place value - I can identify patterns with zeros in the quotient when dividing multiples of 10, 100, or 1000 by 1 digit divisors - I can estimate quotients using compatible numbers and related division facts - I can determine a range for the estimated quotient - I can divide 2 digit dividends by 1 digit divisors by using the equal sharing in meaning of division	- Previous employer techniques that can be used to help maintain focus and manage reactions to potentially frustrating situations - Exchange ideas for mathematical problem solving with a peer - Students Identify and discuss the emotions experienced during math learning - Students actively listen without interruption as peers describe how they approach a task - Students explore taking different perspectives on approaches to problem-solving - Students discuss how a rule or routine can help develop mathematical skills and knowledge and be reasonable contributors	**Math Terms:** - Dividend - Divisor - Multiples - Quotient - Compatible numbers - Range - Dividend - Divisor - Equal sharing - Quotient - Partial quotients - Area model - Remainder - Variable Academic Terms: - Consider - Noticed - Develop - Reasonable

● I can explain how to find how many in each group by using equal sharing ● I can divide 3 digit dividends by 1 digit divisors using partial quotients ● I can explain how to use partial quotient to solve a division problem with a 3 digit dividend ● I can divide 4 digit dividends by 1 digit divisors by using partial quotients ● I can explain how to use partial quotients to solve a division problem with a four digit dividend ● I can divide multi-digit numbers and find quotient and remainder ● I can explain the meaning of the remainder in a division problem ● I can solve division problems by finding the quotient and the remainder ● I can't decide how to interpret the remainder based on the context of the problem ● I can solve multi-step word problems involving division by representing those problems using equation with a variable to represent the unknown	● Students discuss and practice strategies for managing stressful situation ● Identify a problem, use creativity to execute problem-solving steps, and identify multiple Solutions	● Examine ● Represent ● Process ● Modify ● Indicate ● Recognize ● Persuade ● Assess ● Effective

Mathematical Processes
● *PS.4 Model with mathematics.*
Explain which quantities are important in a problem and use a variety of tools and representations to show their relationship.

- *PS.8 Look for and express regularity in repeated reasoning.*
  - Apply previously used strategies to solve new problems.

Resources		
Textbook	**Digital**	**Manipulatives**
This Unit should take 12 instructional days, plus 1 day set aside for the unit assessment: Lesson **7-1 / 1 day** Lesson **7-2 / 1 day** Lesson **7-3 / 2 days** Lesson **7-4 / 2 days** Lesson **7-5 / 2 days** Lesson **7-6 / 1 day** Lesson **7-7 / 1 day** Lesson **7-8 / 2 days**		● Base ten blocks ● Index cards ● Spinner labeled of 2 through 9 ● Counters ● Paper cups ● Rectangular paper strips ● Number cubes

Unit 8-Fraction Equivalence (12 days) **January 10th-January 27th**

General Description of the Unit	
Priority Standards 4.NS.4.Explain why a fraction, a/b, is equivalent to a fraction, (n × a)/(n × b), by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.]	**Supporting Standards** 4.NS.5 Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, 1/2, and 1). Recognize comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model). 4.NS.3 Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Name and write mixed numbers using objects or pictures. Name and write mixed numbers as improper fractions using objects or pictures.
Proficiency Scales	**Tiered Assessments**
Enduring Understandings ● Build on understanding of equivalent fractions by reasoning about the number and the size of the parts. ● Use fraction models to understand the numerical process of multiplying and dividing to generate an equivalent fraction. ● Connect the number line representations to using multiplication and division to generate equivalent fractions. ● Use understanding of equivalent fractions as the relative size of fractions to the benchmark number 0, fraction ½ and 1 are determined. ● Use the knowledge of equivalent fractions to determine how to create fractions with like numerators or denominators.	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: ● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

- Develop an understanding of how the number 1 can be represented as a fraction. (Note that when the numerator and denominator are the same, the fraction is equal to one whole.)
- Extend the understanding of fractions by representing whole numbers greater than 1 as fractions.
- Use number lines to build on the understanding of fractions as they begin to notice patterns between the numerators and denominators in fractions greater than 1.

Key Concepts - I Can:	**SEL**	**Assessment Vocabulary**
- I can recognize equivalent fractions based on the number of parts in the fraction and the that the Mortal plane that number of parts in the whole - I can use fraction model to explain why two factors are equivalent - I can generate equivalent fractions by multiplying or dividing the numerator and the denominator by the same nonzero whole number - I can use a number line to represent different intervals the show generating equivalent fractions by multiplying or dividing the numerator and the denominator by the same nonzero number - I can compare two fractions using Benchmark numbers - I can explain the comparison of two fractions by using	- Students activate listen without interruption as. Describe how they approach a complex mathematical task - Students identify a problem, use creative problem-solving steps, and identify multiple Solutions - Students develop and execute a plan, including selecting tools for mathematical problem solving - Students demonstrate self awareness of personal strengths and areas of challenge in mathematics - Students discuss the value of hearing different viewpoints and approaches to problem-solving - Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical idea posed by others - Students break down a situation quite identify the problem at hand	Math Terms: - equivalent fractions - denominator - numerator - benchmark fraction - like denominators - like numerators - fraction tiles - unit fraction - whole number **Academic Terms:** - generalize - represent - consider - state - notice - represent - recognize - assume - essential - value - conclusion - investigate - analyze - strategy

Benchmark numbers and representations ● I can justify the comparison of two fractions using equivalent fractions and representations ● I can write 1 as a fraction ● I can explain why one can be written as a fraction ● I can write any whole number as a fraction ● I can explain why a whole number can be written as a fraction ● I can represent fractions that are greater than one in different ways ● I can explain how to represent fractions that are greater than one.	● Students collaborate with peers at contribute to its efforts to achieve a collective mathematical goal	● identify

Mathematical Processes
● *PS.7 Look for and make use of structure.*
   o Identify patterns or structure in situations.
   o Change perspective and see things as single objects or as composed of several objects.
   o Model with mathematics
   o Reason abstractly and quantitatively
      Use appropriate tools strategically
      Look for an Express regularity in repeated reasoning

Resources		
Textbook **This Unit should take 9 instructional days, plus 1 day set aside for the unit assessment:** **Lesson 8-1 / 1 day**	**Digital**	**Manipulatives** ● index cards ● scissors ● strips of paper ● fraction circles ● fraction tiles

Lesson 8-2 / 1 day **Lesson 8-3 / 2 days** **Lesson 8-4 / 1 day** **Lesson 8-5 / 1 day** **Lesson 8-6 / 1 day** **Lesson 8-7 / 1 day** **Lesson 8-8 / 1 day** **Unit Assessment - 1 day**		● number cubes ● dominoes ● spinner (1-10) ● blank cubes ● whiteboards and markers

Unit 9- Addition and Subtraction Meanings and Strategies with Fractions (10 days) **January 30th-February 13th**

<u>**General Description of the Unit**</u> **Addition and Subtraction Meanings and Strategies with Fractions**

Students work with unit fractions to create and take apart non-unit fractions. Students will determine that like denominators are needed to compose and decompose fractions. Students will utilize number lines, fraction tiles and fraction models to develop a strong conceptual understanding of how the creation of like denominators helps to correctly add or subtract fractions. Students will extend their understanding of representing fractions, composing and decomposing numbers learned in previous units and grades to adding and subtracting fractions.

Priority Standards	**Supporting Standards**
4.C.5 Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole. **4.AT.5** Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).	

Proficiency Scales	**Tiered Assessments**

Enduring Understandings	**Essential Questions**
- Students develop an understanding of decomposing fractions by breaking them apart into two or more addends in more than one way. - Students extend their understanding of fractions by using fraction models to represent adding fractions with like denominators. - Students show that fractions with like denominators can be added by adding the numerators and keeping the denominators the same. - Students build understanding of subtracting fractions by exploring representations. - Students build understanding of subtracting fractions using fraction models to show that fractions with like denominators can be subtracted by subtracting the numerators and keeping the denominators the same.	To FIND essential questions, please reference yout TE for each lesson under the sections titled: - Number Routine - Decompose It - Pose Purposeful Questions - Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

● Students extend their understanding of adding and subtracting fractions with like denominators by creating appropriate representations to solve word problems.		
Key Concepts - I Can: ● I can decompose a fraction into a sum of fractions with the same denominator in more than one way. ● I can use fraction models to represent addition of fractions with like denominators. ● I can add fractions with like denominators. ● I can use representations to explain how to add fractions with like denominators. ● I can use fraction models to represent subtraction of fractions with like denominators. ● I can subtract fractions with like denominators. ● I can use representations to explain how to subtract fractions with like denominators. ● I can solve word problems involving addition and subtraction of fractions using representations AND/OR equations.	**SEL** ● Students identify personal traits that make them good students, peers and math learners. ● Students exchange ideas for mathematical problem-solving with a peer, listening attentively and providing thoughtful and constructive feedback. ● Students set a focused mathematical goal and make a plan for achieving that goal. ● Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical ideas posed by others, ● Students identify and discuss the emotions experienced during math learning, ● Students discuss how a rule or routine can help develop mathematical skills and knowledge and be responsible contributors.	**Assessment Vocabulary** **Math Terms** ● addend ● decompose ● like denominators ● sum ● unit fraction ● numerator ● denominator ● difference **Academic Terms** ● prediction ● represent ● contradict ● essential ● suppose ● persuade ● distinguish between ● focus ● generalize ● process

Mathematical Processes
- *Reason abstractly and quantitatively.*
- *Model with mathematics.*

- *Use appropriate tools strategically.*

Resources

Textbook	Digital	Manipulatives
This Unit should take 10 instructional days, plus 1 day set aside for the unit assessment: **Lesson 9-1** / 2 days **Lesson 9-2** / 2 days **Lesson 9-3** / 1 day **Lesson 9-4** / 2 days **Lesson 9-5** / 1 day **Lesson 9-6** / 2 days **Unit Assessment - 1 day** *Rationale:* The 2 - day lessons involve students practicing how to represent solutions with number lines/tiles and how to correctly use models to solve fraction addition and subtraction. The 1 day lessons are where students will apply what they have learned in the 2-day lessons. Lesson 9-6 revolves around word problems.		● fraction tiles ● index cards ● number cubes ● fraction circles **Teacher Resources:** ● *Fraction Number Lines with fifths* ● *Blank Open Number Lines* ● *Fraction Number Lines*

Unit 10-Addition and Subtraction Strategies with Mixed Numbers (10 days) **February 14th-March 1st**

General Description of the Unit

Addition and Subtraction of Mixed Numbers

Students are introduced to mixed numbers as numbers that have a whole-number part and a fraction part. They use this understanding to decompose a mixed number into a sum of whole numbers and/or fractions in different ways. Students extend the idea that a fraction can be written as the sum of unit fractions to the idea that a mixed number can be written as the sum of fractions. They also extend their work with adding and subtracting fractions with like denominators to adding and subtracting mixed numbers with like denominators. Students will use representations, such as decomposing one or both mixed numbers and writing the mixed numbers as fractions greater than 1 (improper fractions) to add or subtract.

Priority Standards	Supporting Standards
4.C.6 Add and subtract mixed numbers with common denominators (e.g. by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).	**4.C.5** Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole. **4.AT.5** Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).
Proficiency Scales	**Tiered Assessments**
Enduring Understandings ● I can write mixed numbers as fractions and fractions greater than 1 as mixed numbers. ● I can decompose a mixed number in more than one way. ● I can justify decompositions of mixed numbers using fraction models. ● I can represent the addition of mixed numbers with like denominators. ● I can explain how to represent the addition of mixed numbers with like denominators. ● I can add mixed numbers with like denominators. ● I can describe how to add mixed numbers with like denominators using various addition strategies.	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: ● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

- I can represent the subtraction of mixed numbers with like denominators.
- I can explain how to represent the subtraction of mixed numbers with like denominators.
- I can subtract mixed numbers with like denominators.
- I can explain how to subtract mixed numbers with like denominators using various subtraction strategies.
- I can solve word problems involving addition and subtraction of mixed numbers with like denominators.
- I can demonstrate how to solve word problems involving addition and subtraction of mixed numbers using representations or equations.

Key Concepts - I Can:	SEL	Assessment Vocabulary
● I can write mixed numbers as fractions and fractions greater than 1 as mixed numbers. ● I can decompose a mixed number in more than one way. ● I can justify decompositions of mixed numbers using fraction models. ● I can represent the addition of mixed numbers with like denominators. ● I can explain how to represent the addition of mixed numbers with like denominators. ● I can add mixed numbers with like denominators. ● I can describe how to add mixed numbers with like denominators using various addition strategies. ● I can represent the subtraction of mixed numbers with like denominators.	● Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices. ● Students employ techniques that can be used to help maintain focus and manage reactions to potentially frustrating situations. ● Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal. ● Students recognize and work to understand the emotions of others and practice empathetic responses. ● Students recognize personal strengths through thoughtful self-reflection. ● Students practice strategies for persisting at a mathematical task, such as setting a small group goal	**Math Terms** ● decompose ● mixed number ● sum ● equivalent fractions ● regroup ● difference ● bar diagram ● variable **Academic Terms** ● confirm ● recognize ● approach ● vary ● method ● reasonable ● assumption ● represent ● check ● efficient ● process

● I can explain how to represent the subtraction of mixed numbers with like denominators. ● I can subtract mixed numbers with like denominators. ● I can explain how to subtract mixed numbers with like denominators using various subtraction strategies.	or setting timers for remaining focused.	

Mathematical Processes
- *Attend to precision.*
- *Reason abstractly and quantitatively.*
- *Look for and make use of structure.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Look for and express regularity in repeated reasoning.*

Resources

Textbook	Digital	Manipulatives
This Unit should take 10 instructional days, plus 1 day set aside for the unit assessment: **Lesson 10-1** / 2 days **Lesson 10-2** / 2 days **Lesson 10-3** / 1 day **Lesson 10-4** / 2 days **Lesson 10-5** / 1 day **Lesson 10-6** / 2 days **Unit Assessment - 1 day** *Rationale:* The 2 - day lessons involve students practicing how to decompose mixed numbers with fraction tiles and equations. The 1 day lessons are where students will apply what they have		● Fraction Tiles ● transparent spinner ● fraction circles ● index cards ● paper strips ● number cubes ***Teacher Resources:*** ● *Blank Number Lines 2* ● *Problem Solving Tool*

learned in the 2-day lessons. Lesson 10-6 involves word problems.		

Unit 11- Multiply Fractions by Whole Numbers (9 days) **March 2nd-March 15th**

General Description of the Unit	
<u>**General Description of the Unit**</u> Students apply what they learned in previous grades (and earlier in this school year) about composing fractions, together with their understanding of multiplication, to multiply fractions and mixed numbers by whole numbers. Students begin by representing multiplication of a fraction by a whole number as repeated addition in the same way they represented multiplication with only whole numbers. Students will remember that multiplication of one factor by another whole number factor involves combining a number of copies of one factor. Students can represent this visually with fraction models and number lines. Likewise, students will represent the multiplication of any fraction by a whole number.	
<u>**Priority Standards**</u> **4.AT.2** Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems.	<u>**Supporting Standards**</u> **4.AT.3** Interpret a multiplication equation as a comparison (e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7, and 7 times as many as 5). Represent verbal statements of multiplicative comparisons as multiplication equations.
<u>**Proficiency Scales**</u>	<u>**Tiered Assessments**</u>
<u>**Enduring Understandings**</u>	<u>**Essential Questions**</u> To FIND essential questions, please reference yout TE for each lesson under the sections titled:

● Students extend their understanding of multiplication and fractions as they use representations to multiply unit fractions by whole numbers. ● Students develop an understanding of multiplying a fraction by a whole number using representations and equations. ● Students extend their understanding of multiplying a fraction by a whole number by representing the fraction as a multiple of a unit fraction. ● Students build an understanding of multiplying mixed numbers by whole numbers. ● Students apply understanding of multiplication of fractions and mixed numbers by whole numbers to solve word problems.	● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL Concepts	Assessment Vocabulary
● I can multiply a unit fraction by a whole number the same way I multiply whole numbers. ● I can represent a fraction as a multiple of a unit fraction. ● I can multiply a fraction by a whole number using visual fraction models. ● I can write a multiple of a fraction as a multiple of a unit fraction. ● I can multiply a fraction by a whole number by representing the fraction as a multiple of a unit fraction. ● I can multiply mixed numbers by whole numbers using visual fraction models and equations. ● I can solve problems that involve multiplying fractions by whole numbers.	● Students engage in active listening and work collaboratively with a partner to complete mathematical tasks. ● Students break down a situation to identify the problem at hand. ● Students explore taking different perspectives on approaches to problem solving. ● Students demonstrate self-awareness of personal strengths and areas of challenge in mathematics. ● Students set learning goals and initiate work on tasks to accomplish their goals.	**Math Terms** ● fraction ● denominator ● numerator ● multiple ● unit fraction ● equal groups ● Associative Property of Multiplication ● Distributive Property of multiplication ● mixed number **Academic Terms** ● efficient ● process ● approach ● representation ● effective ● method ● check ● utilize

		● indicate
		● represent

Mathematical Processes
- *Attend to precision*
  - o Identify and use symbols and vocabulary appropriately.
  - o Identify the appropriate mathematical language in another student's explanation of a problem.
- *Reason abstractly and quantitatively.*
- *Model with mathematics.*
- *Look for and express regularity in repeated reasoning.*
- *Make sense of problems and persevere in solving them.*
- *Look for and make use of structure.*

Resources

Textbook	Digital	Manipulatives
This Unit should take 9 instructional days, plus 1 day set aside for the unit assessment:		● fraction tiles
		● index cards
		● number cubes
		● fraction circles
Lesson 11-1 / 2 days		● spinner
Lesson 11-2 / 2 days		*Teacher Resources*
Lesson 11-3 / 1 day		● *Blank Number Lines*
Lesson 11-4 / 2 days		
Lesson 11-5 / 2 days		
Unit Assessment - 1 day		
Rationale: The 2 - day lessons involve students practicing how to multiply unit fractions, fractions and mixed numbers by whole numbers. The extra days provide more time to use fraction tiles, number lines, cubes and equations to represent the work. The 1 day lesson is where students will apply what they have learned in the 2-day lessons. Lesson 11-5 involves word problems..		

Unit 12- Decimal Fractions (9 days) **March 16th-April 4th**

General Description of the Unit	
Students will use decimal grids, number lines, and coins to model fractions with denominators of 10 and 100. They will use models to help generate equivalent fractions with denominators of 10 and 100. Students will also use models to aid in the addition of fractions with unlike denominators of 10 and 100. They will then apply their understanding of decimal fractions to write a fraction with a denominator of 10 or 100 as a decimal and vice versa. Students will locate decimals on number lines and use models and place value knowledge to compare decimals. Finally, students will apply the representation and comparison of decimal fractions to solve word problems involving money.	

Priority Standards	Supporting Standards
4.NS.6 Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., 1/2 = 0.5 = 0.50, 7/4 = 1 3/4 = 1.75)	**4.NS.7** Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual model). **4.M.3 Use the four operations to solve real-world problems involving** distances, intervals of time, volumes, masses of objects, and **money.** Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
Proficiency Scales	**Tiered Assessments**

Enduring Understandings	Essential Questions
- Students extend their understanding of equivalent fractions to express tenths as hundredths. - Students build on their understanding of fractions and decimals by using multiple representations to name tenths and hundredths as fractions and decimals. - Students use their understanding of decimal representations to reason about the size of two decimals and compare them. - Students build on their understanding of equivalent fractions to add fractions with denominators of 10 and 100. - Students will apply their understanding of money and decimal notation to solve problems with dollars, dimes and pennies.	To FIND essential questions, please reference yout TE for each lesson under the sections titled: - Number Routine - Decompose It - Pose Purposeful Questions - Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL Concepts	Assessment Vocabulary
- I can convert larger metric units of length, liquid volume, and mass to smaller equivalent units. - I can explain how to use place-value understanding to help convert metric units. - I can convert larger customary units of weight to smaller equivalent units. - I can explain how to express larger customary units of weight in terms of smaller equivalent units of weight. - I can convert larger customary units of capacity to smaller equivalent units. - I can explain how to express larger customary units of	- Students discuss the value of hearing different viewpoints and approaches to problem solving. - Students employ techniques that can be used to help maintain focus and manage reactions to potentially frustrating situations. - Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical ideas posed by others. - Students identify personal traits that make them good students, peers and math learners. - Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices.	**Math Terms** - equivalent fractions - hundredths - one-hundredth - one-tenth - tenths - decimal - decimal point - cents - dollars **Academic Terms** - notice - represent - essential - vary - confirm - clarify - suppose - approach

capacity in terms of smaller equivalent units of capacity. ● I can convert larger units of time to smaller equivalent units. ● I can explain how to express larger units of time in terms of smaller equivalent units of time. ● I can solve word problems that require converting larger metric units of measure to smaller units. ● I can explain how to solve word problems that involve converting metric units of measure. ● I can solve word problems that require converting larger units of measure to smaller units. ● I can solve word problems that require converting larger units of measure to smaller units. ● I can explain how to use representations to solve word problems that involve converting units of measure. ● I can use the formula for the perimeter of a rectangle. ● I can apply the formula for the perimeter of a rectangle to solve real-world problems. ● I can use the formula for the area of a rectangle. ● I can apply the formula for the area of a rectangle to solve real-world problems.		● argue

- I can solve real-world problems involving area and perimeter.
- I can display measurement data in fractions of a unit on a line plot.
- I can interpret measurement data displayed on a line plot.
- I can analyze data in line plots to solve problems involving addition and subtraction of fractions.
- I can explain how to analyze data displayed on line plots to solve word problems involving addition and subtraction of fractions.
- I can interpret data in circle graphs
- I can interpret data in circle graphs to solve problems.
- I can explain how to solve problems involving data in circle graphs.

Mathematical Processes
- *Use tools appropriately.*
  - o Consider a variety of tools necessary to solve a specific math problem.
- *Attend to precision.*
  - o Accurately determine the unit of measure of a given problem.
- *Model with mathematics.*
- *Look for and make use of structure.*
- *Reason abstractly and quantitatively.*
- *Use appropriate tools strategically.*

Resources

Textbook	Digital	Manipulatives
This Unit should take 9 instructional days, plus 1 day set aside for the unit assessment: **Lesson 12-1** / 2 days **Lesson 12-2** / 2 days **Lesson 12-3** / 1 day **Lesson 12-4** / 2 days **Lesson 12-5** / 2 days **Unit Assessment - 1 day**		● spinner ● number cubes ● colored pencils ***Teaching Resources*** ● *Tenths and Hundredths Representations* ● *Bills, Dimes and Pennies* ● *Decimal Place-Value Charts* ● *10 x 10 Grids* ● *Blank Number Lines*

Unit 13- Units of Measurement and Data (15 days) **April 5th - April 27th**

General Description of the Unit
Students extend their earlier work with metric units of length, liquide volume, and mass to work with relative sizes of usints and to perform conversions within themetric system. Students learn that using base units helps them comprehend relative sizes of measurements expressed in larger or small units. Students learn that a larger metric unit can be converted to a smaller metric unit can be converted to a smaller metric unit by using multiplication.

Priority Standards	Supporting Standards
4.M.2: Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Express measurements in a larger unit in terms of a smaller unit within a single system of measurement. Record measurement equivalents in a two-column table. **4.M.4:** Apply the area and perimeter formulas for rectangles to solve real-world problems and other mathematical problems. Recognize area as additive and find the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems	**4.M.3:** Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **4.AT.1:** Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). **4.DA.1:** Formulate questions that can be addressed with data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, and bar graphs. **4.DA.2:** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using data displayed in line plots. **4.DA.3:** Interpret data displayed in a circle graph.
Proficiency Scales	**Tiered Assessments**
Enduring Understandings - Students understand how to place value relates to converting metric units of measurement. - Students understand the metric and customary units used to measure length, weight, and capacity. - Students understand the meaning of perimeter and area and how the formulas for finding the perimeter and area of a rectangle are used. - Students understand how a line plot is used to prepresent and interpret data	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: - Number Routine - Decompose It - Pose Purposeful Questions - Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL Concepts	Assessment Vocabulary	Vocabulary (cont.)
● I can convert larger metric units of length, liquid volume, and mass to smaller equivalent units. ● I can explain how to use place-value understanding to help convert metric units. ● I can convert larger customary units of weight to smaller equivalent units. ● I can explain how to express larger customary units of weight in terms of smaller equivalent units of weight. ● I can convert larger customary units of capacity to smaller equivalent units. ● I can explain how to express larger customary units of capacity in terms of smaller equivalent units of capacity. ● I can convert larger units of time to smaller equivalent units. ● I can explain how to express larger units of	**Self-Awareness/Self-Efficacy** (Lesson 1): Students with high self-efficacy are more likely to persevere to complete a challenging task. **Responsible Decision-Making-Evaluate (Lesson 2):** When students evaluate their own logic and reasoning, they can develop understanding that helps them make informed decisions. **Social Awareness-Respect Others (Lesson 3):** When students are respectful of one another, they strengthen their class community. **Relationship Skills-Build Relationships (Lesson 4):** Building positive relationship can help establish a strong classroom community. **Social Awareness-Empathy (Lesson 5):** Students who can empathize with other are more able to build positive relationships. **Self-Awareness-Identify Emotions (Lesson 6):** Students who can identify and understand their own feelings and emotions can better manage the reactions to those feelings and emotions. **Self-Management-Self-Motivation (Lesson 7):** Students who self-motivate can take initiative and persevere through challenging tasks. Responsible Decision-Making-Ethical Responsibility (Lesson 8): Understanding rules and routines of the classroom environment can help students be responsible contributors to the learning community. **Self-Management-Self-Motivation (Lesson 9):** Students who self-motivate can take initiative and persevere through challenging tasks. **Relationship Skills-Communication (Lesson 10):** Students who can communicate effectively	**13-1** ● centimeters ● convert ● grams ● kilograms ● liters ● meters ● metric units ● milliliters ● argue ● efficient **13-2** ● customary unit ● equivalence table ● onces ● pound ● ton ● weight ● represent ● utilize **13-3** ● capacity ● cup customary unit ● gallon ● pint ● quart ● process ● vary **13-4** ● days ● equivalence table ● minutes ● second ● confirm ● modify **13-5** ● bar diagram ● number line ● logical	**13-7** ● formula ● length ● perimeter ● width ● distinguish ● between ● indicate 13-8 ● area ● formula ● length ● rectangle ● square units ● unit squares ● width ● examine ● utilize **13-9** ● area ● formula ● perimeter ● rectangle ● variable ● argue ● process **13-10** ● data ● eighth(s) ● fourths(s) ● interval ● line plot ● scale ● distinguish between ● indicate **13-11** ● like denominators ● line plot ● display ● examine 13-12

time in terms of smaller equivalent units of time. ● I can solve word problems that require converting larger metric units of measure to smaller units. ● I can explain how to solve word problems that involve converting metric units of measure. ● I can solve word problems that require converting larger units of measure to smaller units. ● I can solve word problems that require converting larger units of measure to smaller units. ● I can explain how to use representations to solve word problems that involve converting units of measure. ● I can use the formula for the perimeter of a rectangle. ● I can apply the formula for the perimeter of a rectangle to solve real-world problems. ● I can use the formula for the area of a rectangle. ● I can apply the formula for the area of a	are more likely to build strong relationships and contribute to a positive classroom culture. **Self-Management-Organizational Skills (Lesson 11):** Organizing information and work can help students work through challenging mathematical tasks.	● prediction 13-6 ● elapsed time ● time interval ● indicate ● reasonable	● circle graph ● key ● value ● contrast ● useful 13-13 ● analyze ● comparison

rectangle to solve real-world problems. ● I can solve real-world problems involving area and perimeter. ● I can display measurement data in fractions of a unit on a line plot. ● I can interpret measurement data displayed on a line plot. ● I can analyze data in line plots to solve problems involving addition and subtraction of fractions. ● I can explain how to analyze data displayed on line plots to solve word problems involving addition and subtraction of fractions. ● I can interpret data in circle graphs ● I can interpret data in circle graphs to solve problems. ● I can explain how to solve problems involving data in circle graphs.			
Mathematical Processes			

- *PS.1 Make sense of problems and persevere in solving them.*
  - o Explain the meaning of a given problem by analyzing explicit evidence.

- *PS.7 Look for and make use of structure.*
  - o Use what I already know about math to solve new problems.

- *PS.6 Attend to precision*

- *PS.3 Construct viable arguments and critique the reasoning of others*

- *PS.2 Reason abstractly and quantitatively*

- *PS.4 Model with Mathematics*

- *PS.5 Use appropriate tools strategically*

- *PS. 8 Look for and express regularity in repeated reasoning*

Resources

Textbook	Digital	Manipulatives
Pacing: 15 days	IDOE Examples/Tasks 4.M.1	
13-1 *(1 day)*	IDOE Examples/Tasks 4.M.2	● Base-ten blocks
13-2 *(1 day)*	IDOE Examples/Tasks 4.M.3	● meter stick
13-3 *(1 day)*		● Metric Conversion Tables
13-4 *(1 day)*	**VIDEOS**	Teacher Resource
13-5 *(1 day)*	1) Customary Units of	● Curstomary Conversion Tables
13-6 *(1 day)*	Length Overview	Teaching Resource
13-7 *(1 day)*	2) Convert Customary Units	● Number Cubes
13-8 *(1 day)*	of Length	● Metric Convesion Tables
13-9 *(1 day)*	3) Convert Units of Time	● Craft Stick
13-10 *(1 day)*	4) Converting Customary	● Color Tiles
13-11 *(1 day)*	Units of Liquid Volume	● Graph Paper
13-12 *(1 day)*	5) Metric Units Overview	● Blank Number Lines 2 Teaching
13-13 *(1 day)*	6) Convert Metric Units of	Resource
Unit Review (1 Day)	Mass	● Rulers

Unit Assessment *(1 day)*	7) [Convert Metric Units of Length](#) 8) [Convert Metric Units of Capacity](#) 9) [How to read cm, mm on a ruler](#) 10) [How to read an inch ruler](#)	• Number Cards (5-25)	

Unit 14- Geometric Figures (16 days) **May 4th-May 24th ***Short 2 days****

General Description of the Unit
Students build on and formalize their understanding of shapes as they learn to define and name the building blocks of geometric figures, describe and classify shapes in more complex ways, and apply geometric concepts and properties to solve problems.

Priority Standards	**Supporting Standards**
4.G.4: Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge and technology). Identify these in two-dimensional figures.	**4.G.3:** Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **4.M.5:** Understand that an angle is measured with reference to a circle, with its center at the common endpoint of the rays, by considering the

	fraction of the circular arc between the points where the two rays intersect the circle. Understand an angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure other angles. Understand an angle that turns through n one-degree angles is said to have an angle measure of n degrees. **4.M.6:** Measure angles in whole-number degrees using appropriate tools. Sketch angles of specified measure. **4.G.5:** Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles (right, acute, obtuse). **4.G.2:** Recognize and draw lines of symmetry in two-dimensional figures. Identify figures that have lines of symmetry.
Proficiency Scales	**Tiered Assessments**
Enduring Understandings ● Students develop understanding of the characteristics of points, lines, line segments, and rays. ● Students develop understanding of ways to classify angles. ● Students develop the concept of angle measurement ● Student develop ways to classify polygons according to their side lengths, angle sizes, and presence or absence of parallel and perpendicular lines. ● Students develop how to find unknown angle measures ● Students develop the meaning of line symmetry.	**Essential Questions** To FIND essential questions, please reference yout TE for each lesson under the sections titled: ● Number Routine - Decompose It ● Pose Purposeful Questions ● Establish Goals to Focus Learning NOTE: The questions are in blue and change with each lesson…

Key Concepts - I Can:	SEL Concepts	Math Terms
● I can use tools and technology to draw rays, angles, perpendicular, and parallel lines. ● I can describe and identify rays, right, acute, and obtuse angles, and perpendicular and parallel lines.	● **Social Awareness-Develop Perspective (Lesson 14-1)** Developing perspective can help students understand different ways of thinking. ● **Self-Management-Manage Stress (Lesson 14-2)** Student who can regulate their stress are resilient	● endpoint ● line segment ● point ● ray ● examine ● indicate ● acute angle ● obtuse angle ● right angle

● I can find rays, angles, perpendicular, and parallel lines in two-dimensional shapes.	and better prepared for academic success. ● **Relationship Skills-Teamwork (Lesson 14-3)**: When students recognize their own strengths, they can see themselves as resourceful and may be more willing to attempt to problem solve and help others. ● **Self-Awareness-Self_Efficacy (Lesson 14-5)** Students with high self-efficacy are more likely to persevere to comple a challenging task. ● **Social Awareness-Empathy (Lesson 14-6):** Students who can empathize with others are more able to build positive relationships. ● **Responsible Decision-Making-Identify Problems (Lesson 14-7)**: A key step in problem solving is analyzing information to identify the task. ● **Self-Management-Self-Discipline (Lesson 14-8)** Self-disciplined students can manage their impulses to focus on a mathematical task. ● **Responsible Decision-Making-Reflect (Lesson 14-9)** When students reflect, they can make connections between effort and achievement. ● **Relationship Skills-Build Relationships (Lesson 14-10)**: Building positive relationships can	● degrees ● protractor ● parallel lines ● perpendicular lines ● parallelogram ● trapezoid ● acute triangle ● equilateral triangle ● isosceles triangle ● obtuse triangle ● right triangle ● scalene triangle ● line of symmetry ● symmetrical **Academic Terms** ● examine ● indicate ● distinguish between ● notice ● confirm ● process ● focus ● highlight ● utilize ● prediction ● consider ● recognize

	help establish a strong classroom community.	

Mathematical Processes
- *PS.1 Make sense of problems and persevere in solving them.*
    - o *Explain the meaning of a given problem by analyzing explicit evidence*.

- *PS.7 Look for and make use of structure.*
    - o *Use what I already know about math to solve new problems.*

- *PS.6 Attend to precision*

- *PS.3 Construct viable arguments and critique the reasoning of others*

- *PS.2 Reason abstractly and quantitatively*

- *PS.4 Model with Mathematics*

- *PS.5 Use appropriate tools strategically*

- *PS. 8 Look for and express regularity in repeated reasoning*

Resources		
Textbook	**Digital**	**Manipulatives**
(16 days) 14-1 14-2 14-3 14-4 14-5 14-6 14-7 14-8 14-9 14-10	● Digital Game: Operation Station ● Take Another Look Lesson ● Interactive Additional Practice **VIDEOS** 1) Points, Lines and Rays Intro 2) How to Name Points, Segments, Lines, and Rays 3) Finding Right, Acute and Obtuse Angles 4) Quick Protractor Demo 5) Longer Protractor Demo 6) Intro to Symmetry	● Geoboard ● Posterboard ● Student clocks ● full-circle protractor ● half-circle protractor ● pictures of circular objects ● magazines ● newspaper ● protractor ● ruler ● pictures of objects with 90°angles ● pattern blocks

	7) Classifying Triangles 8) Math Antics - Quadrilaterals 9) Quadrilateral Facts IDOE Examples/Tasks 4.G.4 IDOE Examples/Tasks 4.G.1 IDOE Examples/Tasks 4.G.5 IDOE Examples/Tasks 4.M.6 IDOE Examples/Tasks 4.G.2 IDOE Examples/Tasks 4.G.3 IDOE Examples/Tasks 4.M.5	● Dot Paper Teaching Resource ● scissors ● index cards ● Alphabet Letters Teaching Resource ● Construction paper ● Mirrors or miras