Lowndes County
PUBLIC SCHOOLS

4th Grade Math
Curriculum Resources

Curriculum Overview

The Alabama Course of Study: Mathematics (2019) provides the framework for the K-12 study of Mathematics in Alabama's public schools. Content standards in this document are minimum and required, fundamental and specific, but not exhaustive. The standards set high expectations for student learning in all grades.

Here are definitions to help understand this curriculum guide:
- **Units of Study:** A series of lessons, experiences, and assessments aligned to standards that may last two to six weeks.
- **Priority Standards:** These are the standards students must know and be able to do to be prepared for the next grade level or course.
- **Supporting Standards:** These standards support, connect to, or enhance priority standards.
- **Knowledge:** What students should know related to the standard.
- **Skills:** What students should be able to do related to the standard.
- **Bloom's Taxonomy:** This hierarchy helps describe the complexity and requirements of a standard.
- **Quad:** This framework has four parts that help determine the rigor and relevance of a standard: Acquisition, Application, Assimilation, Adaptation.
- **ACT:** This refers to ACT standards alignment.
- **Key Understandings:** Essential ideas students need to understand about the standard.
- **Key Vocabulary:** Keywords that should be taught to ensure understanding of the standard.
- **Formative Assessment:** Frequent and ongoing checks for understanding teachers can use throughout the unit.
- **Summative Assessment:** How students will be assessed at the end of a unit to demonstrate their level of mastery of the standards.
- **Activities & Resources:** Specific examples, lessons, and/or resources that may be used to support implementation of the standard.
- **RTI:** Response to Intervention - additional supports/resources teachers can use for students who need them.
- **Extensions:** Additional activities and resources to extend the learning experience, especially for accelerated students.

4th Grade Curriculum At A Glance - Pacing Calendar

Quarter	# Weeks	Unit Name	Priority Standards	Supporting Standards
1st	1	Launch Week	**Pre-Assessment**	
1st	3	UNIT 1: Generalize Place Value Understanding	**4.6, 4.7, 4.8**	**4.9**
1st	4	UNIT 2: Performing Multi-Digit Calculations	**4.10, 4.11, 4.12**	
1st	2	UNIT 3: Use Operations with Whole Numbers	**4.1, 4.2, 4.3**	**4.10, 4.11, 4.11a, 4.12, 4.12a**
2nd	1	UNIT 4: Factors and Multiples	**4.4, 4.4a, 4.11, 4.11a**	
2nd	3	UNIT 5: Understand and Generate Equivalent Fractions	**4.13, 4.14**	
2nd	4	UNIT 6: Add, Subtract & Multiply Fractions Using Whole Numbers	**4.15, 4.16**	
3rd	2	UNIT 7: Represent and Interpret Data on Line Plots	**4.20**	**4.22c**
3rd	3	UNIT 8: Compare Decimals Using Models and Number Sense	**4.17, 4.18**	**4.19, 4.22a, 4.22c**
3rd	4	UNIT 9: Measurement Conversions Equivalence	**4.21, 4.21a, 4.22, 4.22a, 4.22b, 4.23**	**4.3, 4.3a, 4.3b, 4.15, 4.15a, 4.15b, 4.15c, 4.16**
4th	3	UNIT 10: Generate and Analyze Patterns	**4.5**	**4.3, 4.4, 4.4a, 4.10, 4.11, 4.11a, 4.12, 4.12a**
4th	3	UNIT 11: Understanding Angles	**4.24, 4.25, 4.26, 4.26a, 4.27**	**4.10**
4th	3	UNIT 12: Analyze and Draw Shapes with Line Symmetry	**4.28, 4.28a, 4.29, 4.29a**	**4.24, 4.27**

UNIT 1: Generalize Place Value Understanding	DURATION: 3 weeks

CONTENT STANDARDS	
PRIORITY STANDARDS ● **4.6** Using models and quantitative reasoning, explain that in a multi-digit whole number, a digit in any place represents ten times what it represents in the place to its right. ● **4.7** Read and write multi-digit whole numbers using standard form, word form, and expanded form. ● **4.8** Use place value understanding to compare two multi-digit numbers using >, =, and < symbols.	**SUPPORTING STANDARDS** ● **4.9** Round Multi-Digit whole numbers to any place using place value understanding

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Use models and reasoning to explain how a digit in any place is ten times what the digit represents in the place to its right	Applying		
	Compare numbers using place value understanding using >, =, and < symbols.	Analyzing		
	Read and write multi-digit numbers using word form/number names, standard form and expanded form	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)

Week 1:
- Day 1: I can read and write numbers through one million in expanded form, with numerals, and using number names.
- Day 2: I can recognize that a digit in one place has ten times the value of the same digit in the place to its right.
- Day 3: I can place value to compare numbers and record my comparisons using <,=, or >.
  Mid-Chapter Checkpoint
- Day 4: I can use place value to round numbers.
- Day 5: I can construct arguments using what I know about place-value relationships.

Week 2:
- Day 6: Assessment

KEY VOCABULARY
- Place Value
- Millions
- Period
- Expanded Form
- Greater than symbol(>)
- Less than symbol(<)
- Rounding
- Conjecture

ESSENTIAL QUESTION(S)

Unit 1
- How are greater numbers written?
- How can whole numbers be compared?
- How are place values related?

PRIOR KNOWLEDGE
- Understand that our number system is based on the number ten.
- Write a multi-digit number in expanded form
- Connect relationships within periods to relationships between place values in a number
- Able to round to the nearest ten and to the nearest hundred
- Explain that the three digits of a three digit number represent amounts of hundreds, tend and ones
- Read and write numbers to 1000 using base -ten numerals, number names, and expanded form
- Explain the value of the zeros in a given hundred as zero tens and zero ones
- Explain that a hundred is ten groups of ten using representations
- Compose and decompose numbers using expanded form
- Compare three digit numbers based recording the results of comparisons with >, =, < and read orally

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	**Other Resources**	**ACAP Resources**
	[4.6 Proficiency Scales](#)	
	[4.7 Proficiency Scales](#)	
	[4.8 Proficiency Scales](#)	

RTI	**EXTENSION OPPORTUNITIES**

UNIT 2: Performing Multi-Digit Calculations	DURATION: 4 weeks

CONTENT STANDARDS	

PRIORITY STANDARDS
- 4.10 Use place value strategies to fluently add and subtract multi-digit whole numbers and connect strategies to the standard algorithm.
- 4.11 Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.
- 4.12 Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends.

SUPPORTING STANDARDS
- 4.11a Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.
- 4.12a Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD			ACT
	Use the standard algorithm for addition and subtraction	Applying				
	Connect models and representations to the algorithm	Applying				
	Represent the product of two factors using an area model	Applying				
	Use strategies based on place value and properties of operations to find whole number quotients and remainders.	Applying				
	Use arrays and area models to find whole number quotients and remainders.	Applying				

are place values related?

Strategies based on place value (partial products), the properties of operations, arrays and area models to represent a two digit factor times a two digit factor.		Understanding				
	Illustrate division situations with rectangular arrays and area models.	Applying				
	Use strategies based on place value and properties of operations to find products.	Applying				
	Explain the product of two factors using equations.	Understanding				
	Make connections between models and equations	Applying				

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
Week 2:
- **Day 7:** I can use properties and strategies to change a problem to add and subtract with mental math.
- **Day 8:** I can use rounding and place value to estimate sums and differences.
- **Day 9:** I can connect place-value concepts to using addition algorithms.
- **Day 10:** I can use the standard algorithm and place value to add multi-digit numbers.

KEY VOCABULARY
- **Commutative Property of Addition**
- **Associative Property of Addition**
- **Identity Property of Addition**
- **Count Up**
- **Countdown**
- **Compensation**

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- Day 11: I can connect place-value concepts to using the standard algorithm for subtraction.
- Day 12: I can use the standard algorithm and place value to subtract whole numbers.
- Day 13: I can use the standard algorithm to subtract from numbers with zeros.
- Day 14: I can make sense of quantities and relationships in problem situations.
- Day 15: Assessment
- Day 16: I can find the products of multiples of 10,100, and 1,000 using mental math and place-value strategies.
- Day 17: I can use rounding to estimate products and check if my answer is reasonable.
- Day 18: I can use arrays and partial products to multiply.
- Day 19: I can use area models and partial products to multiply.
- Day 20: I can use area models and partial products to multiply.
- Day 21: I can use mental math strategies based on place value and properties of operations to multiply.
- Day 22: I can choose an appropriate strategy to multiply.
- Day 23: I can apply the math I know to solve problems.
- Day 24: Assessment

- Variable
- Algorithm

ESSENTIAL QUESTION(S)
Unit 2
- Topic 2-
- How can sums and differences of whole numbers be estimated?
- What are standard procedures for adding and subtracting whole numbers?
- Topic 3-
- How can you multiply by multiples of 10,100,1000?
- How can you multiply whole numbers?
- Topic 4-
- How can you use a model to multiply?
- How can you use the Distributive Property to multiply?
- How can you use multiplication to solve problems?
- Topic 5-
- How can mental math be used to divide? H
- How can quotients be estimated? How can the steps for dividing be explained?

PRIOR KNOWLEDGE
- Define the commutative and associative properties of addition and subtraction.
- Subtract within 100 using strategies and algorithms based on the relationship between addition and subtraction.
- Subtract within 100 using strategies and algorithms based on properties of operations.
- Subtract within 100 using strategies and algorithms based on place value.
- Add within 100 using strategies and algorithms based on the relationship between addition and subtraction.
- Add within 100 using strategies and algorithms based on properties of operations.
- Add within 100 using strategies and algorithms based on place value.
- Recall basic addition and subtraction facts.
- Define regrouping, total, sum, difference and solve.
- Add and subtract two two-digit numbers with and without regrouping.
- Determine the value of the number in the ones, tens, hundreds

and thousands place using concrete models or drawings and strategies based on place value.
- Match the number in the ones, tens, hundreds and thousands position to a pictorial representation or manipulative of the value.
- Model written method for recording horizontal and vertical addition and subtraction problems.
- Represent two- and three-digit numbers with multiple models. Examples: models—base ten blocks, number lines, linking cubes, straw bundles.
- Recall single-digit addition and subtraction facts.
- Add and subtract within 20, e.g., by using objects or drawings to represent the problem.
- Apply divisibility rules for 2, 5, and 10. Example: Recognizing that 32 is divisible by 2 because the digit in the ones place is even.
- Apply basic multiplication facts.
- Understand subtraction as an unknown
- addend problem.
- Recognize division as repeated subtraction, parts of a set, parts of a whole, or the inverse of multiplication.
- Name the first 10 multiples of each one-digit natural number. Example: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70.
- Recognize multiplication as repeated addition, and division as repeated subtraction.
- Apply properties of operations as strategies to add and subtract.
- Recall basic addition and subtraction facts.
- Use repeated addition to solve problems with multiple addends.
- Count forward in multiples from a given number. Examples: 3, 6, 9, 12; 4, 8, 12, 16.
- Recall doubles addition facts.
- Model written method for composing equations.
- Recognize fractions as lengths from zero to one.
- Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2..., and represent whole-number sums and differences within 100 on a number diagram.
- Identify a number line.
- Recognize whole numbers as lengths from zero to one.
- Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2..., and represent whole-number sums and differences within 100 on a number diagram.

	● Identify a number line. ● Label the fractions on a pre-made number line diagram. ● Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2..., and represent whole-number sums and differences within 100 on a number diagram. ● Recognize a number line diagram with equally spaced points. ● Compare length using non ● standard units to determine which is longer.

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources **4.10 Proficiency Scales**	ACAP Resources
RTI	EXTENSION OPPORTUNITIES	

UNIT 3: Use Operations with Whole Numbers	DURATION: 2 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- 4.1 Interpret and write equations for multiplicative comparisons.
- 4.2 Solve word problems involving multiplicative comparison using drawings and write equations to represent the problem, using a symbol for the unknown number.
- **4.3** Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted.

SUPPORTING STANDARDS
- 4.10 Use place value strategies to fluently add and subtract multi-digit whole numbers and connect strategies to the standard algorithm.
- 4.11 Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.
- 4.11a Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.
- 4.12 Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends.
- 4.12a Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.
- **4.3a** Write equations to show solutions for multi-step word problems with a letter standing for the unknown quantity.
- 4.3b Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
How to write an equation to represent a word situation.	Interpret and write equations for multiplicative comparisons.	Applying		
Which quantity is being multiplied and which factor is telling how many times.	Solve word problems involving multiplicative comparison.	Applying		

are place values related?

Varied language that describes multiplicative comparisons.	**Write equations using a symbol for the unknown to represent word problems involving multiplicative comparison**	Applying		
	Use drawings to represent the word situation involving multiplicative comparison.	Applying		
	Solve multi-step word situations using the four operations.	Applying		
Distinguish between multiplicative comparison and additive comparison		Analyzing		
How to calculate sums, differences, products, and quotients.	**Represent quantities and operations physically, pictorially, or symbolically**	Applying		
Estimation strategies to justify solutions as reasonable.	**Write equations to represent the word problem and use symbols to represent unknown quantities.**	Creating		
	Use context and reasoning to interpret remainders.	Applying		
	Use estimation strategies to assess reasonableness of answers by comparing actual answers to estimates.	Evaluating		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
- **Week 1:**
- **Day 1:** I can explain how multiplication can compare quantities (Jason is 4 times as old as Ben)
- **Day 2:** I can write equations to show multiplicative comparison
- **Days 3-4:** I can represent multiplicative comparisons in a variety of ways (Unifix cubes, base ten blocks, and or bar diagrams)
- **Day 5:** Assess and Reteach
- **Week 2**
- **Days 1:** I can explain the difference between multiplicative (as many times as) and additive (more) comparisons
- **Day 2:** I can solve a variety of multi-step word problems involving all four operations on whole numbers
- **Day 3:** I can explain and justify solutions using connections between the problem and the related equations involving a single letter unknown
- **Day 5:** I can evaluate the reasonableness of solutions using estimation strategies; Assess

KEY VOCABULARY
- **Associative Property of Multiplication**
- **Partial Products**
- **Numerical expression**
- **Distributive Property**
- **Compensation**
- **Commutative Property of Multiplication**

ESSENTIAL QUESTION(S)
Unit 3
- Topic 6
- How can mental math be used to divide?
- How can quotients be estimated?
- How can the steps for dividing be explained?

PRIOR KNOWLEDGE
- Interpret product of whole numbers
- Given a visual model and/or manipulatives, use multiplication to solve word problems with multiplication
- Solve word problems with multiplication
- Interpret the product of whole numbers
- Write a word problem to represent additive comparisons
- Represent and write additive comparisons
- Explain how addition can compare quantities

FORMATIVE ASSESSMENT

SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources **4.1 Proficiency Scales**	ACAP Resources
RTI	EXTENSION OPPORTUNITIES	

UNIT 4: Factors and Multiples	DURATION: 1 week

CONTENT STANDARDS	

PRIORITY STANDARDS	SUPPORTING STANDARDS
4.4 For whole numbers in the range of 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors 4.4a Determine whether a whole number in the range 1 to 100 is a multiple of a given one-digit number 4.11 Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations. 4.11a Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.	4.4b Determine whether a whole number in the range 1 to 100 is a prime or composite.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Illustrate the product of two factors using rectangular arrays and area models	Applying		
	Find products using place value and the properties of operations	Applying		
	Explain the product of two factors using equations	Evaluating		

	Make connections between models and equations	Analyzing		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
- Week 1:
- Day 1: I can use arrays to find the factors of a given whole number
- Day 2: I can use multiplication to find all the factor pairs for a whole number
- Day 3: I can explain the product of two factors using equations and make connections between models and equations
- Day 4: I can use repeated reasoning to generalize how to solve similar problems
- Day 5: Reteach and Assess

KEY VOCABULARY
- Product
- Factor
- Compose
- Decompose
- Equation
- Rectangular Array
- Area Model
- Partial Product

ESSENTIAL QUESTION(S)
Unit 4

- Topic 7-
- How is comparing with multiplication different from comparing with addition?
- How can you use equations to solve multi-step problems?

PRIOR KNOWLEDGE
- Multiplication and division within 100 involving equal groups, arrays, measurement quantities; represent the problem using models, drawings and equations with a symbol for the unknown number
- Connect multiplication to area
- Multiplication and division of multi-digit numbers
- Understanding Remainders to check whether one number is a factor of another

FORMATIVE ASSESSMENT

SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources **4.3 Proficiency Scales**	ACAP Resources
RTI	EXTENSION OPPORTUNITIES	

UNIT 5: Understand and Generate Equivalent Fractions	DURATION: 2 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.13** Using area and length fraction models, explain why one fraction is equivalent to another, taking into account that the number and size of the parts differ even though the two fractions themselves are the same size.
- **4.14** Compare two fractions with different numerators and different denominators using concrete models, benchmarks (0,1/2, 1), common denominators, and/or common numerators, recording the comparisons with symbols >, =, or <, and justifying the conclusions.

SUPPORTING STANDARDS
- **4.13a** Apply principles of fraction equivalence to recognize and generate equivalent fractions.
- **4.14a** Explain that comparison of two fractions is valid only when the two fractions refer to the same whole.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
Recognize equivalent fractions using area and length models		Understanding		
	Generate equivalent fractions using area and length models	Applying		
	Use multiplication to find equivalent fractions	Applying		
	Use division to find equivalent fractions	Applying		
	Compare two fractions by using benchmarks (0, ½, 1)	Analyzing		
	Compare two fractions with a common denominator and/or common numerator	Analyzing		
	Compare two fractions with a different denominator and/or different numerator	Analyzing		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)	KEY VOCABULARY	
Week 1: **Day 1-2: I can use area models to find equivalent fractions beyond simple fractions** **Day 3: I can apply the Identity Property of Multiplication by multiplying the numerator and denominator by the same nonzero number** **Day 4: I can use division to find equivalent fractions** **Day 5: Reteach and Assess** **Day 6: I can use benchmarks (0, ½, 1) to compare fractions** **Day 7-8: I can use equivalent fractions to compare fractions with a common denominator or a common numerator** **Day 9: Reteach & Assess**	**Fraction** **Numerator** **Denominator** **Equivalent Fraction** **Partition** **Unit Fraction** **Remainder** **Partial Quotients**	
ESSENTIAL QUESTION(S) Unit 5 - Topic 8- **What are some ways to name the same part of a whole?** **How can you compare fractions with unlike numerators and denominators?**	**PRIOR KNOWLEDGE** **Understand the meaning of fractions and use various models to represent them** **Use visual models to recognize and generate simple equivalent fractions and to compare two fractions with the same numerator and denominator** **Understand factors and multiples**	

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES		
<u>**Envision Resources**</u>	<u>**Other Resources**</u> **[4.13 Proficiency Scales](#)** **[4.14 Proficiency Scales](#)**	<u>**ACAP Resources**</u>
RTI	**EXTENSION OPPORTUNITIES**	

UNIT 6: Add, Subtract & Multiply Fractions Using Whole Numbers	DURATION: 4 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.15** Model and justify decompositions of fractions and explain addition and subtraction of fractions as joining or separating parts referring to the same whole.
- **4.16** Apply and extend previous understandings of multiplication to multiply a whole number times a fraction.

SUPPORTING STANDARDS
- **4.15a** Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and equations.
- **4.15b** Add and subtract fractions and mixed numbers with like denominators using fraction equivalence, properties of operations, and the relationship between addition and subtraction.
- **4.15c** Solve word problems involving addition and subtraction of fractions and mixed numbers having like denominators, using drawings, visual fraction models, and equations to represent the problem.
- **4.16a** Model and explain how a non-unit fraction can be represented by a whole number times the unit fraction.
- **4.16b** Extend previous understanding of multiplication to multiply a whole number times any fraction less than one.
- **4.16c** Solve word problems involving multiplying a whole number times a fraction using visual fraction models and equations to represent the problem.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Decompose a fraction or mixed number into a sum of fractions in more than one way	Applying		
	Use models to show how fractions with the same denominator can be joined	Applying		
	Join parts of the same whole by adding fractions with like denominators	Applying		
	Use fraction strips and area models to	Applying		

	subtract fractions			
	Subtract fractions by separating parts of the same whole	Applying		
	Use models to multiply fractions by whole numbers	Applying		
	Use symbols and equations to multiply a fraction by a whole number	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
- **Week 1:**
- **Day 1-2:** I can use representations to show how fractions with the same denominator can be joined
- **Day 3:** I can decompose a fraction or mixed number into a sum of fractions in more than one way
- **Day 4:** I can decompose fractions into unit fractions and then join them to find the total.
- **Day 5 Reteach and Assess**
- **Day 6-7:** I can solve problems involving joining parts of the same whole by adding fractions with like denominators
- **Day 8-9:** I can subtract fractions(a/b-c/d) where a > 1, by first decomposing a/b into a unit fraction, 1/b, and then separating c unit fractions from the total; The number of unit fractions remaining is the difference between the two fractions
- **Day 10: Reteach and Assess**
- **Day 11:** I can use the relationship between addition and subtraction to subtract fractions with like denominators
- **Day 12-13:** I can use models and equivalent fractions to add and subtract fractions
- **Day 14: Reteach and Assess**
- **Day 15-16:** I can use models to multiply a fraction by a whole number, writing the multiplication as repeated addition of the fraction

KEY VOCABULARY
- **Unit Fraction**
- **Fraction**
- **Numerator**
- **Denominator**
- **Fraction Greater than 1**
- **Decomposition**
- **Partition**
- **Whole**
- **Equation**

Day 17-18: I can use symbols and equations to multiply a fraction by a whole number **Day 19: Reteach and Assess**		

ESSENTIAL QUESTION(S)	PRIOR KNOWLEDGE
Unit 6 **Topics 9 & 10-** **How can you add and subtract fractions and mixed numbers with like denominators?** **How can you describe a fraction using a unit fraction?** **How can you multiply a fraction by a whole number?**	**Understand the meaning of fractions and use various models to represent them** **Recognize and generate simple equivalent fractions and to express whole numbers as fractions** **Use diagrams to recognize and generate equivalent fractions** **Understand how to find equivalent fractions by multiplying the numerator and denominator by the same nonzero number or by dividing the numerator and the denominator by common factor greater than 1**

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources 4.15 Proficiency Scales 4.16 Proficiency Scales	ACAP Resources
RTI	**EXTENSION OPPORTUNITIES**	

UNIT 7: Represent and Interpret Data on Line Plots	DURATION: 2 weeks

CONTENT STANDARDS

PRIORITY STANDARDS	SUPPORTING STANDARDS
● **4.20** Interpret data in graphs (picture, bar, and line plots) to solve problems using numbers and operations	● **4.20a** Create a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). ● **4.20b** Solve problems involving addition and subtraction of fractions using information presented in line plots. ● **4.22c** Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Read and interpret data using graphs (picture, bar, and line plots)	Applying		
	Analyze data in graphs (picture, bar and line plots) to solve problems	Analyzing		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)	KEY VOCABULARY	
● **Week 1:** ● **Day 1:** I can read and interpret data using line plots ● **Day 2:** I can read line plots with fractional units ● **Day 3:** I can display fractional measures in a line plot ● **Day 4:** Reteach & Assess ● **Day 5:** I can create a line plot with given data ● **Day 6:** I can use data to solve problems, some of which require adding and subtracting mixed numbers ● **Day 7:** Reteach & Assess	● Line plot ● Scale ● Data Set ● Table ● Graph	

ESSENTIAL QUESTION(S)	PRIOR KNOWLEDGE

Unit 7
    ● Topic 11
    ● How can you solve problems using data on a picture, bar or line plot?
    ● How can you make a picture, bar or line plot?
	● Understand the relationship between a number line and a line plot
	● Make line plots to represent measurement data involving whole numbers as well as fractions and mixed numbers in halves or fourths if a unit
	● Adding and subtracting fractions and mixed numbers with like denominators

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources 4.13 Proficiency Scales 4.14 Proficiency Scales 4.15 Proficiency Scales	ACAP Resources

RTI	EXTENSION OPPORTUNITIES

UNIT 8: Compare Decimals Using Models and Number Sense	DURATION: 3 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.17** Express, model, and explain the equivalence between fractions with denominators of 10 and 100.
- **4.18** Use models and decimal notation to represent fractions with denominators of 10 and 100.

SUPPORTING STANDARDS
- **4.17a** Use models and decimal notation to represent fractions with denominators of 10 and 100.
- **4.19** Use visual models and reasoning to compare two decimals to hundredths (referring to the same whole), recording comparisons using symbols >, =, or <, and justifying the conclusions.
- **4.22a** Solve measurement problems involving simple fractions or decimals.
- **4.22c** Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Use equivalency to add two fractions with denominators of 10 and 100	Applying		
	Explain equivalence between fractions with denominators of 10 and 100	Evaluating		
	Represent addition of fractions with denominators of 10 and 100	Applying		
	Express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100	Applying		
	Use models to illustrate equivalence between fractions with denominators of 10 and 100	Applying		
	Explain the relationship between a fraction and a decimal	Evaluating		

	Represent a decimal on the number line with varied endpoints	Applying		
	Use decimal notation to represent fractions with a denominator of 10 or 100	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)	KEY VOCABULARY	Common Factor
- Week 1: - Day 1-2: I can write fractions in decimal form with denominators of 10 and 100 - Day 3-4: I can locate given decimals on a number line and name the decimal for a given point - Day 5 Assess and Reteach - Day 6: I can use place value to compare decimals to hundredths - Day 7: I can use models to compare fractions - Day 8: Assess and Reteach - Day 9-10: I can add fractions with denominators of 10 and 100, renaming fractions to have common denominators when necessary - Day 11: Assess and Reteach - Day 12: I can represent addition of fractions with denominators of 10 and 100 - Day 13: I can express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100 - Day 14: I can use models to illustrate equivalence between fractions with denominators of 10 and 100 - Day 15: Assess and Reteach	- Fraction - Numerator - Denominator - Equivalent - Tenths - Hundredths - Fraction model tenths	Benchmark fraction

ESSENTIAL QUESTION(S)	PRIOR KNOWLEDGE
Unit 8 - Topic 12- - How can you write a fraction as a decimal? - How can you locate points on a number line? - How do you compare decimals?	- Define equivalent. - Recognize pictorial representations of equivalent fractions. - Recognize different interpretations of fractions, including parts of a set or a collection, points on a number line, numbers that lie between two consecutive whole numbers, and lengths of segments on a ruler. - Recognize that equal shares of identical wholes need not have the same shape. - Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-

are place values related?

dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
- Label a fraction with multiple representations. Recognize that a whole can be partitioned into differing equal parts (halves, fourths, eighths, etc.).
- Partition circles and rectangles into two and four equal shares; and describe the shares using the words halves, fourths, and quarters; and use the phrases half of, fourth of, and quarter of.
- Recognize different interpretations of fractions, including parts of a set or a collection, points on a number line, numbers that lie between two consecutive whole numbers, and lengths of segments on a ruler.
- Label a pictorial representation.
- Recognize that a fraction is a part of a whole.

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources 4.17 Proficiency Scales 4.18 Proficiency Scales	ACAP Resources
RTI	EXTENSION OPPORTUNITIES	

are place values related?

UNIT 9: Measurement Conversions Equivalence	DURATION: 4 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.21** Select and use an appropriate unit of measurement for a given attribute (length, mass, liquid volume, time) within one system of units: metric - km, m, cm; kg, g, l, ml; customary - lb, oz; time - hr, min, sec.
- **4.21a** Within one system of units, express measurements of a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
- **4.22** Use the four operations to solve measurement word problems with distance, intervals of time, liquid volume, mass of objects, and money.
- **4.22a** Solve measurement problems involving simple fractions or decimals.
- **4.22b** Solve measurement problems that require expressing measurements given in a larger unit in terms of a smaller unit
- **4.23** apply area and perimeter formulas for rectangles in real-world and mathematical situations

SUPPORTING STANDARDS
- **4.3** Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted.
- **4.3a** Write equations to show solutions for multi-step word problems with a letter standing for the unknown quantity.
- **4.3b** Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding.
- **4.15** Model and justify decompositions of fractions and explain addition and subtraction of fractions as joining or separating parts referring to the same whole.
- **4.15a** Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and equations.
- **4.15b** Add and subtract fractions and mixed numbers with like denominators using fraction equivalence, properties of operations, and the relationship between addition and subtraction.
- **4.15c** Solve word problems involving addition and subtraction of fractions and mixed numbers having like denominators, using drawings, visual fraction models, and equations to represent the problem.
- **4.16** Apply and extend previous understandings of multiplication to multiply a whole number times a fraction.
- **4.22c** Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
Select and use an appropriate unit of measurement for a given attribute (length, mass, liquid, volume, time)		**Understanding**		

are place values related?

	Convert customary units of length from a larger unit to a smaller unit	Applying		
	Convert customary units of capacity from a larger unit to a smaller unit	Applying		
	Convert customary units of weight from a larger unit to a smaller unit	Applying		
Understand the relative size of metric units of length		Understanding		
	Convert from a larger metric unit of length to a smaller unit	Applying		
	Use the four operations to solve problems using conversion of customary and metric units	Applying		
	Solve real-world and mathematical problems by applying area and perimeter formulas of rectangles	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
- **Week 1:**
- **Day 1:** I can determine an appropriate unit of measurement for a given attribute
- **Day 2-3:** I can convert customary units of length from a larger unit to a smaller unit.
- **Day 4:** Assess and Reteach
- **Day 5-6** I can convert customary units of capacity from a larger unit to a smaller unit
- **Day 7:** Assess and Teach
- **Day 8-9** I can convert customary units of weight from a larger unit to a smaller unit
- **Day 10:** Assess and Reteach
- **Day 11-12:** I can convert larger metric units of length to a smaller unit
- **Day 13:** Assess and Reteach

KEY VOCABULARY
- **Decompose**
- **Compose**
- **Mixed number**
- **/capacity**
- **Quart**
- **Gallon**
- **Cup**
- **Pint**
- **Fluid Ounce**
- **Weight**
- **Ounce**
- **Pound**
- **Ton**
- **Centimeter**
- **Millimeter**

● **Day 14-15: I can use the four operations to solve problems using conversion of customary and metric units** ● **Day 16: I can solve real-world problems by calculating the area and perimeter of rectangles** ● **Day 17: Assess and Teach**	● **Kilometer** ● **Meter** ● **Milliliter** ● **Liter** ● **Mass** ● **Milligram** ● **Gram** ● **Kilogram** ● **Area** ● **Perimeter** ● **Formula**

ESSENTIAL QUESTION(S)
Unit 9
- ● **Topic 13-**
- ● **How can you convert from one unit to another?**
- ● **How can you be precise when solving math problems?**

PRIOR KNOWLEDGE
- ● **Define liquid volume, mass, grams, kilograms, and liters.**
- ● **Recognize how the standard units of measure compare to one another.**
- ● **Identify key terms for word problems.**
  Examples: Difference, altogether, in all, between.
- ● **Express the length of an object as a whole number of length units by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.**
- ● **Recall basic addition, subtraction, multiplication, and division facts.**
- ● **Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object.**
- ● **Compare equivalent units of time using hours and minutes.**
  Examples: 60 minutes = one hour, 30 minutes = one half of an hour.
- ● **Recognize key vocabulary and/or phrases associated with time.**
  Examples: Quarter 'til = 15 minutes before; half past the hour = 30 minutes after the hour.
- ● **Compare the lengths of time to complete everyday activities**
  Examples: Brushing your teeth = about 2 minutes; riding the bus = about 20 minutes.
- ● **Tell and write time in hours and half-hours using analog and digital clocks.**
- ● **Recognize hour, minute, and second hands on an analog clock.**
- ● **Count by 5's to 60.**
- ● **Determine the monetary value of a set of like and unlike bills.**
- ● **Determine the monetary value of a set of like and unlike coins.**

- Apply addition and subtraction strategies.
- Understand key words in addition and subtraction word problems involving money.
  Examples: adding to, taking from, putting together, taking apart, sum, difference, all together, how much more, how much is left, in all, cents, dollar, change, paid, total.
- Count forward from a given number by ones, fives, tens, and twenty-fives.
- Identify coins and bills and their value.
- Identify symbols for dollar ($), cent (¢).
- Identify coins by name including penny, nickel, dime and quarter.
- Sort pennies, nickels, dimes, and quarters.
- Count 10 objects.
  Examples: pennies and dollar bills
- Tell and write time in hours and half-hours using analog and digital clocks.
- Recognize vocabulary terms related to time measurements.
  Examples: minute, hour, half hour, o'clock, morning, evening, a.m., p.m.
- Illustrate time to hour and half hour.
  Example: Given the time 3:00, illustrate long hand and short hand positions on a clock.
- Identify the short hand as the hour hand, and the long hand as the minute hand on an analog clock.
- Identify the first number as the hour, and the numbers after the colon as the minutes on a digital clock.
- Write numerals 0 to 59.
- Recognize numerals 0 to 59.
- Count to 60 by fives.
- Distinguish between analog and digital clocks.
- Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources **4.3 Proficiency Scales** **4.15 Proficiency Scales**	ACAP Resources
RTI	**EXTENSION OPPORTUNITIES**	

UNIT 10: Generate and Analyze Patterns	DURATION: 3 weeks

CONTENT STANDARDS	
PRIORITY STANDARDS ● **4.5** Generate and analyze a number or shape pattern that follows a given rule.	**SUPPORTING STANDARDS** ● **4.3** Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted. ● **4.4** For whole numbers in the range 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors ● **4.4a** Determine whether a whole number in the range 1 to 100 is a **4.10** Use place value strategies to fluently add and subtract multi-digit whole numbers and connect strategies to the standard algorithm.multiple of a one-digit number ● **4.11** Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations. ● **4.11a** Illustrate and explain the product of two factors using equations, rectangular arrays, and area models. ● **4.12** Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends. ● **4.12a** Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Create or extend a number sequence based on a rule	Creating		
	Identify features of the pattern in the sequence that are not described by the rule	Understanding		
	Use a rule to extend a number pattern and solve a problem	Applying		

	Generate a shape pattern that follows a given rule	Creating		
	Predict a shape in the pattern	Evaluating		
	Solve problems by using patterns			

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)
- Week 1:
- Day 1-2: I can use a given rule to extend a number sequence
- Day 3-4: i can find features of the pattern that are not given in the rule
- Day 4: I can generate a table of values from a given rule and look for features of the pattern in the table
- Day 5: Assess and Teach
- Day 6-7: I can use a rule to predict a number or shape in a pattern
- Day 8-9:   I can use structure to solve problems related to extending patterns
- Day 10: Assess and Reteach

KEY VOCABULARY
- Rule
- Repeating Pattern
- Unknown
- Equation
- Even Number
- Factor
- Multiple
- Odd number

ESSENTIAL QUESTION(S)
Unit 10
- Topic 14:
- How can you use a rule to continue a pattern?
- How can you use a table to extend a pattern?
- How can you use a repeating pattern to predict a shape

PRIOR KNOWLEDGE
- Demonstrate computational understanding of multiplication and division by solving authentic problems with multiple representations using drawings, words, and/or numbers.
- Identify key vocabulary words to solve multiplication and division word problems.
  Examples: times, every, at this rate, each, per, equal/equally, in all, total.
- Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- Recall basic multiplication facts.
- Add and subtract within 20.

	- **Represent repeated addition, subtraction, and equal groups using manipulatives.** - **Distinguish between rows and columns.** - **Use repeated addition to solve problems with multiple addends.** - **Count forward in multiples from a given number.** Examples: 3, 6, 9, 12; 4, 8, 12, 16. - **Recall doubles and addition facts.** - **Model written method for composing equations.**

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

<u>Envision Resources</u>	<u>Other Resources</u> **[4.3 Proficiency Scales](#)** **[4.10 Proficiency Scales](#)** **[4.11 Proficiency Scales](#)**	<u>ACAP Resources</u>
RTI	EXTENSION OPPORTUNITIES	

UNIT 11: Understanding Angles	DURATION: 3 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.24** Identify an angle as a geometric shape formed wherever two rays share a common endpoint.
- **4.25** Use a protractor to measure angles in whole-number degrees and sketch angles of specified measure.
- **4.26** Decompose an angle into non-overlapping parts to demonstrate that the angle measure of the whole is the sum of the angle measures of the parts
- **4.26a** Solve addition and subtraction problems on a diagram to find unknown angles in real-world or mathematical problems
- **4.27** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, and identify these in two-dimensional figures.

SUPPORTING STANDARDS
- **4.10** Use place value strategies to fluently add and subtract multi-digit whole numbers and connect strategies to the standard algorithm.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Recognize and draw lines, rays, and angles with different measure	Understanding		
	Use known angle measures to measure unknown angles	Applying		
	Use a protractor to measure and draw angles	Applying		
	Use addition and subtraction to solve problems with unknown angle measures	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)	KEY VOCABULARY	
- Week 1: - Day 1: I can identify the following terms: Point, line, line segment, ray and angle - Day 2-3: I can classify angles as right, acute, obtuse or straight - Day 4: Assess and Reteach - Day 5-6: I can measure angles with a protractor - Day 7-8: I can add and subtract angle measures to solve problems involving all such as finding unknown angle measure on a diagram - Day 9: Assess and Reteach	- Point - Line - Line segment - Ray - Right angle - Acute angle - Obtuse angle - Perpendicular Lines - Parallel Lines - Angle Measure - Interesting lines - Endpoint	
ESSENTIAL QUESTION(S) Unit 11 - Topic 15- - What are some common geometric terms? - How can you measure angles?	**PRIOR KNOWLEDGE** - Recall the vocabulary of shapes (labels, sides, faces, vertices, etc.). - Recognize and draw shapes having specified attributes such as a given number of angles. - Build and draw shapes to possess defining attributes. - Sort shapes into categories. - Define side, angle, face, closed, and open. - Use vocabulary related to shape attributes. Examples: sides, angles, face, closed, open. - Trace shapes. - Sort triangles, quadrilaterals, pentagons, hexagons, and cubes. - Explore triangles, quadrilaterals, pentagons, hexagons, and cubes.	

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	Other Resources **4.27 Proficiency Scales**	ACAP Resources
RTI	EXTENSION OPPORTUNITIES	

UNIT 12: Analyze and Draw Shapes with Line Symmetry	DURATION: 3 weeks

CONTENT STANDARDS

PRIORITY STANDARDS
- **4.28** Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.
- **4.28a** Describe right triangles as a category, and identify right triangles.
- **4.29** Define a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.
- **4.29a** Identify line-symmetric figures and draw lines of symmetry.

SUPPORTING STANDARDS
- **4.24** Identify an angle as a geometric shape formed wherever two rays share a common endpoint.
- **4.27** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, and identify these in two-dimensional figures.

KNOWLEDGE (students need to know):	SKILLS (students need to be able to do):	BLOOM'S TAXONOMY	QUAD	ACT
	Draw and identify perpendicular, parallel, and intersecting lines	Applying		
	Sort two-dimensional figures based on angle sizes or presence of parallel and/or perpendicular lines	Understanding		
	Classify and name shapes using more than one characteristic (line segments and angles)	Applying		
	Identify right triangles by looking for the triangles that have one right angle	Understanding		
	Recognize and draw lines of symmetry, identify line symmetric figures	Applying		

KEY COMPONENTS

LEARNING TARGETS (incremental learning target by week)	KEY VOCABULARY	
Week 1: **Day 1:** I can identify and classify parallel, perpendicular and intersecting lines **Day 2-3:** I can classify triangles by their sides and by their angles **Day 4:** Assess and Reteach **Day 5:** I can recognize and draw lines of symmetry and identify line symmetric figures **Day 6:** I can draw figures with a given number of lines of symmetry	**Two-Dimensional Figure** **Parallel Lines** **Perpendicular Lines** **Angle** **Right Triangle**	
ESSENTIAL QUESTION(S) Unit 12 - Topic 16- - How can you classify triangles and quadrilaterals - What is line symmetry?	**PRIOR KNOWLEDGE** - Recall the vocabulary of shapes (labels, sides, faces, vertices, etc.). - Recognize and draw shapes having specified attributes such as a given number of angles. - Build and draw shapes to possess defining attributes. - Recognize and draw shapes having specified attributes such as a given number of angles. - Build and draw shapes to possess defining attributes. - Sort shapes into categories. - Define side, angle, face, closed, and open. - Use vocabulary related to shape attributes. Examples: sides, angles, face, closed, open. - Trace shapes. - Sort triangles, quadrilaterals, pentagons, hexagons, and cubes. - Explore triangles, quadrilaterals, pentagons, hexagons, and cubes. - Two lines are parallel if they never intersect and are an equal distance apart - Two lines are perpendicular if they are at right angles to each other - A right triangle is a triangle that has one right angle	

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT

ACTIVITIES & RESOURCES

Envision Resources	**Other Resources** **4.27 Proficiency Scales** **4.28 Proficiency Scales**	**ACAP Resources**

RTI	**EXTENSION OPPORTUNITIES**