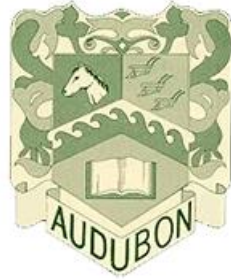


# Audubon Public Schools



Grade 4: Math  
Curriculum Guide

Developed by:  
Mr. Zachary Bentley  
Mrs. Kathleen Hueber  
Mrs. Kelly Miller

August 15, 2020

## Table of Contents

Cover Page	Page 1
Table of Contents	Page 2
Course Description	Page 3
Overview / Progressions	Page 4
Unit 1	Page 8
Unit 2	Page 18
Unit 3	Page 30
Appendix A: Previous Curriculum Documents	Page 55



## Course Description

### Grade 4: Math

In fourth grade, students continue to refine their understanding of the base ten system and use place value concepts up to one million to understand the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal sized groups, arrays, and area models) to compute products of multi-digit whole numbers efficiently and accurately. In addition, students will apply their understanding of models for division and the relationship between division and multiplication as they develop and use efficient and accurate procedures to find quotients involving multi-digit dividends. Students will begin to interpret remainders based upon the context of the question. Students will apply appropriate methods to estimate and mentally calculate sums, differences, products, and quotients. Students will develop an understanding of fraction equivalence including methods for generating and recognizing equivalent fractions. Students will add and subtract fractions with like denominators, as well as, using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number. Students will describe, analyze, compare, and classify two-dimensional shapes based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and lines of symmetry.

## Overview / Progressions

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
<p style="text-align: center;"><b>Unit 1</b></p> <p>Place Value Understanding; Fluently Add and Subtract; Factors and Multiples Multi-Digit Whole Numbers; Use Strategies &amp; Properties to Multiply by 1 &amp; 2 digit numbers</p> <p style="text-align: center;"><b>(Topics 1, 2, 7, 3, 4)</b></p>	<ul style="list-style-type: none"> <li>● 4.NBT.A.1</li> <li>● 4.NBT.A.2</li> <li>● 4.NBT.A.3</li> <li>● 4.NBT.B.4</li> <li>● 4.NBT.B.5</li> <li>● 4.OA.A.2</li> <li>● 4.OA.A.3</li> <li>● 4.OA.B.4</li> </ul>	<ul style="list-style-type: none"> <li>● Extend understanding of place value from 1,000 to 1,000,000 (Topic 1)</li> <li>● Relationships between the values of digits are developed and used to compare and round numbers (Topic 1)</li> <li>● Develop fluency with the standard algorithm for addition and subtraction (Topic 2)</li> <li>● Understand the meaning of factors and multiples and how it relates to multiplication (Topic 7)</li> <li>● Develop the concept of prime and composite numbers (Topic 7)</li> <li>● Develop an understanding of multiplying multi-digit numbers by 1 &amp; 2 digit numbers using strategies based on place value and the properties of operations (Topic 3 &amp; 4)</li> </ul>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
<p style="text-align: center;"><b>Unit 2</b></p> <p>Use Strategies &amp; Properties to Divide by 1-Digit Numbers; Use Operations with Whole Numbers to Solve Problems; Factors &amp; Multiples; Extend Understanding of Fraction Equivalence &amp; Ordering; Understand Addition and Subtraction of Fractions</p> <p style="text-align: center;"><b>(Topics 5, 6, 8, 9)</b></p>	<ul style="list-style-type: none"> <li>● 4.NBT.B.4</li> <li>● 4.NBT.B.5</li> <li>● 4.NBT.B.6</li> <li>● 4.OA.A.1</li> <li>● 4.OA.A.2</li> <li>● 4.OA.A.3</li> <li>● 4.NF.A.1</li> <li>● 4.NF.A.2</li> <li>● 4.NF.B.3a</li> <li>● 4.NF.B.3b</li> <li>● 4.NF.B.3c</li> <li>● 4.NF.B.3d</li> </ul>	<ul style="list-style-type: none"> <li>● Develop an understanding of finding whole-number quotients and remainders with up to four-digit dividends and 1-digit divisors (Topic 5)</li> <li>● Solve word problems using skills developed involving multi-digit whole number addition, subtraction, multiplication, and division (Topic 6)</li> <li>● Recognizes and generates equivalent fractions (Topic 8)</li> <li>● Compares fractions with different numerators and denominators (Topic 8)</li> <li>● Adds and subtracts fractions and mixed numbers with like denominators (Topic 9)</li> </ul>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>

Overview	Standards for Mathematical Content	Unit Focus	Standards for Math
----------	------------------------------------	------------	--------------------

<p style="text-align: center;"><b>Unit 3</b></p> <p>Extend Multiplication Concepts to Fractions; Represent and Interpret Data on Line Plots; Understand and Compare Decimals; Find Equivalence in Units of Measure; Generate and Analyze Patterns; Understand Concepts of Angles and Angle Measurements; Lines, Angles, and Shapes</p> <p style="text-align: center;"><b>(Topics 10-16)</b></p>	<ul style="list-style-type: none"> <li>● 4.NF.A.1</li> <li>● 4.NF.A.2</li> <li>● 4.NF.B.3b</li> <li>● 4.NF.B.3c</li> <li>● 4.NF.B.3d</li> <li>● 4.NF.B.4a</li> <li>● 4.NF.B.4b</li> <li>● 4.NF.B.4c</li> <li>● 4.NF.C.5</li> <li>● 4.NF.C.6</li> <li>● 4.NF.C.7</li> <li>● 4.MD.A.1</li> <li>● 4.MD.A.2</li> <li>● 4.MD.A.3</li> <li>● 4.MD.B.4</li> <li>● 4.MD.C.5a</li> <li>● 4.MD.C.5b</li> <li>● 4.MD.C.6</li> <li>● 4.MD.C.7</li> <li>● 4.OA.A.3</li> <li>● 4.OA.B.4</li> <li>● 4.OA.C.5</li> <li>● 4.NBT.B.4</li> <li>● 4.NBT.B.5</li> <li>● 4.NBT.B.6</li> <li>● 4.G.A.1</li> <li>● 4.G.A.2</li> <li>● 4.G.A.3</li> </ul>	<ul style="list-style-type: none"> <li>● Develop an understanding of multiplying fractions by whole numbers (Topic 10)</li> <li>● Use the four operations to solve time problems (Topic 10)</li> <li>● Develop an understanding of how to read, make, and interpret line plots that represent measurements given in halves, fourths, and eighths of a unit (Topic 11)</li> <li>● Develop an understanding of decimals and decimal notation through hundredths by connecting fractions and decimals (Topic 12)</li> <li>● Compare decimals by reasoning about their size (Topic 12)</li> <li>● Use their understanding of equivalent fractions to add a fraction with a denominator of 10 and a fraction with a denominator of 100 (Topic 12)</li> <li>● Convert measurements from larger to smaller units within one system of measurement, customary or metric (Topic 13)</li> <li>● Solve real world problems involving distance or area and perimeter (Topic 13)</li> <li>● Generalize and analyze number shapes and patterns (Topic 14)</li> <li>● Develop an understanding of angle concepts including angle measurements (Topic 15)</li> </ul>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate problem-solving strategies to solve problems.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>
---	--	--	--

		<ul style="list-style-type: none"> <li>• Understand how shapes can be analyzed, described, and classified, with attention to properties of sides, angles, and lines of symmetry (Topic 16)</li> </ul>	
--	--	---	--

<b>Subject: Math</b>	<b>Grade: 4</b>	<b>Unit: 1</b> <b>Place Value, Addition &amp; Subtraction, &amp; Multiplication of 1 &amp; 2 Digit Numbers</b>	<b>1<sup>st</sup> Trimester (View Pacing Guide for specific details)</b>
<b>Content Standard</b>	<b>Suggested Standards for Mathematical Practice</b>	<b>Critical Knowledge &amp; Skills</b>	
4.NBT.A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of	MP.7 Look for and make use of structure	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• A quantitative relationship exists between the digits in place value positions of a multi-digit number.</li> </ul> <p>Students are able to:</p>	

<p>place value and division. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]</p>		<ul style="list-style-type: none"> <li>• Explain that a digit in one place represents ten times what it would represent in the place to its right.</li> </ul> <p>Learning Goal 6: For a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right.</p>
<p>4.NBT.A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]</p>	<p>MP.7 Look for and make use of structure</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Multiple representations of whole numbers exist.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• read and write multi-digit whole numbers using base-ten numerals.</li> <li>• read and write multi-digit whole numbers using number names.</li> <li>• read and write multi-digit whole numbers using expanded form.</li> <li>• compare two multi-digit numbers using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols.</li> </ul> <p>Learning Goal 7: Compare two multi-digit whole numbers (up to one million) using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> for numbers presented as base ten numerals, number names, and/or in expanded form.</p>
<p>4.NBT.A.3. Use place value understanding to round multi-digit whole numbers to any place. [Grade 4 expectations in this domain are limited to whole</p>	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Estimation</li> </ul> <p>Students are able to:</p>



<p>numbers less than or equal to 1,000,000.]</p>		<ul style="list-style-type: none"> <li>• round whole numbers to any place.</li> </ul> <p>Learning Goal 8: Round multi-digit whole numbers up to one million to any place.</p>
<p>4.NBT.B.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. *[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmarked)</p>	<p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning</p>	<p>Concept(s):</p> <p>No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> <li>• subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> </ul> <p>Learning Goal 1: Fluently add and subtract multi-digit whole numbers using the standard algorithm</p>
<p>4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the</p>	<p>MP.7 Look for and make use of structure</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values.</li> <li>• multiply two two-digit numbers using strategies based on place value.</li> </ul>

<p>calculation by using equations, rectangular arrays, and/or area models. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]</p>		<ul style="list-style-type: none"> <li>• represent these operations with equations, rectangular arrays, and area models.</li> <li>• explain the calculation by referring to the model (equation, array, or area model).</li> </ul> <p>Learning Goal 2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular arrays, and area models.</p>
<p>4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• multiply to solve word problems involving multiplicative comparison.</li> <li>• divide to solve word problems involving multiplicative comparison.</li> <li>• represent problems with drawings and equations, using a symbol for the unknown number.</li> <li>• distinguish word problems involving multiplicative comparison from those involving additive comparison.</li> </ul> <p>Learning Goal 5: Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations.</p>
<p>4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Proper use of the equal sign</li> </ul>

<p>answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *(benchmarked)</p>	<p>quantitatively.</p> <p>MP.4 Model with mathematics.</p> <p>MP.7 Look for and make use of structure</p>	<ul style="list-style-type: none"> <li>• Improper use of the equal sign (e.g. <math>3 + 7 = 10 - 5 = 5</math> is incorrect)</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• solve multi-step word problems involving any of the four operations.</li> <li>• solve multi-step word problems involving interpretation of a remainder.</li> <li>• write equations to represent multi-step word problems, using a letter to represent the unknown quantity.</li> <li>• explain why an answer is reasonable.</li> <li>• use mental computation and estimation strategies to determine whether an answer is reasonable.</li> </ul> <p>Learning Goal 4: Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies.</p>
<p>4.OA.B.4. 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 factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a</p>	<p>MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Whole numbers are a multiple of each of its factors.</li> <li>• Prime numbers do not have factors other than 1 and the number itself.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• find all factor pairs for any whole number (between 1 and 100).</li> <li>• given a one-digit number, determine whether a given whole number</li> </ul>

<p>given whole number in the range 1–100 is prime or composite</p>		<p>(between 1 and 100) is a multiple of the one-digit number.</p> <ul style="list-style-type: none"> <li>• determine whether a given whole number (between 1 and 100) is prime or composite.</li> </ul> <p>Learning Goal 1: Find all factor pairs for a whole number up to 100 and determine whether it is a multiple of a given 1-digit whole number and whether it is prime or composite.</p>
--	--	---

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>• Quick Writing</li> <li>• Whiteboard work/Slatework</li> <li>• Exit tickets</li> <li>• Entrance Tickets</li> <li>• Checks for Understanding (Quick Checks)</li> <li>• Quizzes</li> <li>• Small group activities</li> <li>• Pre-Assessment</li> <li>• Teacher’s observation</li> <li>• Kahoot</li> <li>• Quizlet</li> </ul>	<ul style="list-style-type: none"> <li>• Test</li> <li>• Common Assessment</li> <li>• Post Unit Assessment</li> <li>• Benchmark Assessment</li> <li>• Performance Task Assessment</li> </ul>
<b>Suggested Primary Resources</b>	<b>Suggested Supplemental Resources</b>
<p>enVision Mathematics</p>	<p>IXL. com - Activities A (1-15); (19-20); (24-26); B-D            Reflex Math            Anchor Charts</p>

	Vocab/Word Walls Games Prodigy
<b>Cross-Curricular Connections &amp; 21<sup>st</sup> Century Skills</b>	
<ul style="list-style-type: none"> <li>● Open ended math problems using language from ELA (Building Math Literacy-enVision)</li> <li>● Math Read Alouds</li> <li>● Youtube Videos</li> <li>● STEM Activities (enVision)</li> <li>● 3 Act Plays (enVision)</li> </ul>	
<b>Essential Questions</b>	<b>Enduring Understanding</b>
<ul style="list-style-type: none"> <li>● What is a place value table?</li> <li>● How can I use a place value chart? How can I use place value to compare two numbers?</li> <li>● How can I show my understanding of place value using computation?</li> <li>● What is estimation?</li> <li>● Why do I have to learn to estimate?</li> <li>● How can I add whole numbers?</li> <li>● What is a variable?</li> <li>● What are the parts to a subtraction problem?</li> <li>● How can I use the standard algorithm to fluently add a multi-digit whole number?</li> <li>● How can I use the standard algorithm to fluently subtract a multi-digit whole number?</li> <li>● How can I multiply equal sized groups?</li> <li>● How can I easily multiply with multiples of 10, 100 and 1,000?</li> <li>● How can I solve problems using variables?</li> <li>● How can we solve multi-step word problems?</li> <li>● What is the commutative property of multiplication?</li> <li>● What is the associative property of multiplication?</li> <li>● What is the identity property of multiplication?</li> </ul>	<ul style="list-style-type: none"> <li>● A place value table helps me to recognize the value of each digit in a number.</li> <li>● I can use place value tables to solve problems.</li> <li>● I can round multi-digit whole numbers using place value.</li> <li>● I can use a place value table to determine if a number is greater or lesser than another.</li> <li>● The digit to the left is ten times bigger than the digit to the right.</li> <li>● I can use symbols &lt;, &gt;, = to compare numbers.</li> <li>● I can use partial products to show my understanding of place value.</li> <li>● Estimation is rounding to the nearest 10, 100, 1,000 and so on.</li> <li>● Estimation helps me what the answer to a problem should be close to.</li> <li>● I can add whole numbers by lining up places and adding each column, remembering to regroup when the sum in any column is greater than 9.</li> <li>● I can subtract whole numbers by lining up places and subtracting each column, remembering when to regroup when the bottom number is greater than the top number.</li> <li>● A variable is a letter that represents any number.</li> </ul>

- What is the distributive property of multiplication?
- What are some ways I can use the distributive property?
- What are multiplication patterns?
- How can I multiply multi digit numbers?
- How can I multiply a whole number of up to four digits by a one-digit whole number?
- How can I multiply two two digit numbers?
- How can I use estimation to make sure my answer is correct?
- How can I identify factor pairs?
- How is a whole number a multiple of its factors?
- How are multiples and factors related?
- How can we find the multiples of whole numbers?
- What are prime and composite numbers?

- The 3 parts to a subtraction problem is the number I am subtracting from – minuend; the number I am subtracting – subtrahend; and the answer to the subtraction problem – difference.
- I can see and use patterns when I multiply with multiples.
- I can use the associative, commutative, identity and zero properties of multiplication to figure out problems involving variables.
- I can multiply multi digit numbers to solve problems by lining up the digits with the same place values.
- I can estimate to check if my exact answer is close.
- I can use compatible numbers to make estimation easier.
- I can use an array or area model to multiply.
- I can use pictures, to model, and an equation using a symbol to represent the unknown.
- I can use repeated addition, skip counting, using doubles and adding on to a fact to answer multiplication questions.
- The commutative property of multiplication is - the order of the factors does not change the product.
- The associative property of multiplication is – when I multiply 3 numbers, the way the numbers are grouped does not change the product.
- The identity property of multiplication is – when I multiply 1 and any number, the product is that same number.
- I can use the distributive property to rename one factor as a sum and multiply greater numbers.
- I can use the distributive property when I am solving word problems.
- The distribution property is – when I multiply the sum of 2 numbers by a 3<sup>rd</sup> number, it is the same as multiplying each addend by the 3<sup>rd</sup> number and adding the product.
- Patterns in a multiplication table make it easy to learn and remember multiplication facts.
- I can use the given pattern rule to interpret what comes next in the series.

	<ul style="list-style-type: none"> <li>● I understand that <math>45 = 5 \times 9</math>, which is a statement that says 45 is 5 times as many as 9 and 9 times as many as 5.</li> <li>● A multiple of a whole number is found by multiplying that number by any other number.</li> <li>● I understand that a whole number is a multiple of its factors.</li> <li>● I can estimate to check if my exact answer is close.</li> <li>● I can use compatible numbers to make estimation easier.</li> <li>● I can use addition, subtraction, multiplication, and division to solve multi-step word problems.</li> <li>● A multiple of a whole number is found by multiplying that number by any other number.</li> <li>● I understand that a whole number is a multiple of its factors.</li> <li>● When I multiply 2 even numbers, the product is even.</li> <li>● When I multiply 2 odd numbers, the product is odd.</li> <li>● When I multiply an even and an odd product, the number will be even.</li> <li>● Multiples of 10 are 10,20,30,40 and so on.</li> </ul>
--	--

<b>Differentiation</b>		
<b>504</b>	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>

<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
<b>IEP</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>
<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		
<ul style="list-style-type: none"> <li>● Creativity</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> </ul>	



<ul style="list-style-type: none"> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Communication</li> <li>● Collaboration</li> </ul>
<b>Integrating Technology</b>	
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>

<b>Subject: Math</b>	<b>Grade: 4</b>	<b>Unit: 2</b>  Use Strategies & Properties to Divide by 1-Digit Numbers; Use Operations with Whole Numbers to Solve Problems; Extend Understanding of Fraction Equivalence & Ordering; Understand Addition and Subtraction of Fractions	<b>2nd Trimester (View Pacing Guide for specific details)</b>
<b>Content Standards</b>	<b>Suggested Standards for Mathematical Practice</b>	<b>Critical Knowledge &amp; Skills</b>	
	MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced	

<p><b>4.NBT.B.4</b> Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]</p>	<p>MP.8 Look for and express regularity in repeated reasoning</p>	<p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> <li>• subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> </ul> <p>Learning Goal 1: Fluently add and subtract multi-digit whole numbers using the standard algorithm</p>
<p><b>4.NBT.B.5</b> 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]</p>	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values.</li> <li>• multiply two two-digit numbers using strategies based on place value.</li> <li>• represent these operations with equations, rectangular arrays, and area models.</li> <li>• explain the calculation by referring to the model (equation, array, or area model).</li> </ul> <p>Learning Goal 2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular</p>

		arrays, and area models
<b>4.NBT.B.6</b> 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• 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 the relationship between multiplication and division.</li> <li>• represent these operations with equations, rectangular arrays, and area models.</li> <li>• explain the calculation by referring to the model (equation, array, or area model).</li> </ul> <p>Learning Goal 3: Divide a whole number of up to four-digits by a one-digit divisor; represent and explain the calculation using equations, rectangular arrays, and area models.</p>
4.OA.A.1. 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.	<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.4 Model with mathematics.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Multiplication equations represent comparisons.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• explain multiplication equations as comparisons.</li> </ul>

		<ul style="list-style-type: none"> <li>• write multiplication equations given word problems indicating multiplicative comparison.</li> </ul> <p>Learning Goal 4: Write multiplication equations from word problems indicating multiplicative comparisons and describe multiplication equations as comparisons</p>
<p>4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• multiply to solve word problems involving multiplicative comparison.</li> <li>• divide to solve word problems involving multiplicative comparison.</li> <li>• represent problems with drawings and equations, using a symbol for the unknown number.</li> <li>• distinguish word problems involving multiplicative comparison from those involving additive comparison.</li> </ul> <p>Learning Goal 5: Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations.</p>
<p>4.OA.A.3. Solve multistep word problems posed with whole</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p>	<p>Concept(s):</p>

<p>numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.4 Model with mathematics.</p> <p>MP.7 Look for and make use of structure.</p>	<ul style="list-style-type: none"> <li>• Proper use of the equal sign</li> <li>• Improper use of the equal sign (e.g. <math>3 + 7 = 10 - 5 = 5</math> is incorrect)</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• solve multi-step word problems involving any of the four operations.</li> <li>• solve multi-step word problems involving interpretation (in context) of a remainder.</li> <li>• write equations to represent multi-step word problems, using a letter to represent the unknown quantity.</li> <li>• explain why an answer is reasonable.</li> <li>• use mental computation and estimation strategies to determine whether an answer is reasonable.</li> </ul> <p>Learning Goal 4: Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies</p>
---	---	---

<p>4.NF.A.1. Explain why a fraction <math>\frac{a}{b}</math> is equivalent to a fraction <math>\frac{n \times a}{n \times b}</math> 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. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Equivalent fractions are the same size while the number and size of the parts differ.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• explain, using visual fraction models, why two fractions are equivalent.</li> <li>• generate equivalent fractions, using fraction <math>\frac{a}{b}</math> as equivalent to fraction <math>\frac{n \times a}{n \times b}</math>.</li> </ul> <p>Learning Goal 6: Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models.</p>
<p>4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as <math>\frac{1}{2}</math>. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Fractions may only be compared when the two fractions refer to the same whole.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• create common denominators in order to compare two fractions.</li> <li>• create common numerators in order to compare two fractions.</li> <li>• compare two fractions with different numerators and different denominators by comparing to a benchmark fraction.</li> </ul>

<p>the conclusions, e.g., by using a visual fraction model.</p> <p>[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]</p>		<ul style="list-style-type: none"> <li>record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</li> </ul> <p>Learning Goal 7: Compare two fractions with different numerators or different denominators, recording comparison with <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justifying the conclusion using visual fraction models.</p>
<p>4.NF.B.3. Understand a fraction <math>a/b</math> with <math>a &gt; 1</math> as a sum of fractions <math>1/b</math>.</p> <p>4.NF.B.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>4.NF.B.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: <math>3/8 = 1/8 + 1/8 + 1/8</math>; <math>3/8 = 1/8 + 2/8</math>; <math>2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8</math>.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>Some fractions can be decomposed.</li> <li>Addition/subtraction of fractions is joining/separating parts referring to the same whole.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>decompose a fraction into a sum of fractions with the same denominator in more than one way.</li> <li>write decompositions of fractions as an equation.</li> <li>develop visual fraction models that represent decomposed fractions and use them to justify decompositions.</li> <li>add and subtract fractions having like denominators in order to solve real world problems.</li> <li>develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions.</li> </ul>

<p>[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]</p> <p>4.NF.B.3c. Add and subtract mixed numbers with like 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.</p> <p>4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> <p>[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]</p>		<ul style="list-style-type: none"> <li>• add and subtract mixed numbers with like denominators.</li> </ul> <p>Learning Goal 8: Decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition as an equation; justify the decomposition with a visual fraction model.</p> <p>Learning Goal 1: Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction. Learning Goal 2: Solve word problems involving addition and subtraction of fractions having like denominators using</p>
--	--	--



Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> <li>● Quick Writing</li> <li>● Whiteboard work/Slatework</li> <li>● Exit tickets</li> <li>● Entrance Tickets</li> <li>● Checks for Understanding-(Quick Checks)</li> <li>● Quizzes</li> <li>● Small group activities</li> <li>● Pre-Assessment</li> <li>● Teacher’s observation</li> <li>● Kahoot</li> <li>● Quizlet</li> </ul>	<ul style="list-style-type: none"> <li>● Test</li> <li>● Common Assessment</li> <li>● Post Unit Assessment</li> <li>● Performance Base Assessment</li> <li>● Benchmark Assessment</li> </ul>
Suggested Primary Resources	Suggested Supplemental Resources
enVision Mathematics	IXL. com - Activities Reflex Math Anchor Charts Vocab./Word Walls Games Prodigy
Cross-Curricular Connections & 21 <sup>st</sup> Century Skills	
<ul style="list-style-type: none"> <li>● Open ended math problems using language from ELA (Building Math Literacy-enVision)</li> <li>● Math Read Alouds</li> <li>● Youtube Videos</li> <li>● STEM Activities (enVision)</li> <li>● 3 Act Plays (enVision)</li> </ul>	
Essential Questions	Enduring Understanding
What are ways I can multiply? How can I multiply and divide to solve word problems? How can we solve multi-step word problems?	I can use an array or area model to multiply. I can use pictures, to model, and an equation using a symbol to represent the unknown.

<p>How can we solve multi-step word problems with remainders?  How can I find the answer to a multiplication problem?  What is the commutative property of multiplication?  What is the associative property of multiplication?  What is the identity property of multiplication?  What is the distributive property of multiplication?  What are some ways I can use the distributive property?  What are multiplication patterns?  How can I continue a given pattern ?  How can I interpret a multiplication problem?  What are the multiples of 10?  How can I solve division problems?  How can multiplication help me to divide?  What is the relationship between multiplication and division?  How can I identify factor pairs?  How is a whole number a multiple of its factors?  How are multiples and factors related?  How can we find the multiples of whole numbers?  What are prime and composite numbers?  How can I multiply a whole number of up to four digits by a one-digit whole number?  How can I multiply two two digit numbers?  How can I find whole-number quotients with remainders having up to 4-digit dividends and one-digit divisors?  What are equivalent fractions?  What are improper fractions?  How are fractions compared?  How are fractions with different numerators and denominators compared?  How can I decompose a fraction?  What is a mixed number?  How can I add and subtract mixed numbers with like denominators?  How can I add fractions?  How can I subtract fractions?  How can I show my understanding of multiplying a fraction by a whole number in word problems?</p>	<p>I can use repeated addition, skip counting, using doubles and adding on to a fact to answer multiplication questions.  The commutative property of multiplication is - the order of the factors does not change the product.  The associative property of multiplication is – when I multiply 3 numbers, the way the numbers are grouped does not change the product.  The identity property of multiplication is – when I multiply 1 and any number, the product is that same number.  I can use the distributive property to rename one factor as a sum and multiply greater numbers.  I can use the distributive property when I am solving word problems.  The distributive property is – when I multiply the sum of 2 numbers by a 3<sup>rd</sup> number, it is the same as multiplying each addend by the 3<sup>rd</sup> number and adding the product.  Patterns in a multiplication table make it easy to learn and remember multiplication facts.  I can use the given pattern rule to interpret what comes next in the series.  I understand that <math>45 = 5 \times 9</math>, which is a statement that says 45 is 5 times as many as 9 and 9 times as many as 5.  A multiple of a whole number is found by multiplying that number by any other number.  I understand that a whole number is a multiple of its factors.  When I multiply 2 even numbers, the product is even.  When I multiply 2 odd numbers, the product is odd.  When I multiply an even and an odd product, the number will be even.  Multiples of 10 are 10,20,30,40 and so on.  I can use addition, subtraction, multiplication, and division to solve multi-step word problems.  I can use equal sharing and rectangular array to solve word problems that involve division.  Knowing multiplication facts will help me remember division facts.  Multiplication and division are opposites.  I can use place value strategies and the properties of operation to help me multiply.  I can use place value strategies, properties of operation, and knowledge of the relationship between multiplication and division to find quotients.</p>
--	--

<p>How can I multiply fractions?          How can I multiply a fraction and a whole number?          How can I generate equivalent fractions?          In Word Problems, how can I show my understanding of fraction equivalence and ordering?</p>	<p>Fractions that name the same amount are equivalent fractions.          Improper fractions are fractions that have a numerator that is greater than or equal to its denominator.          I can use an equation to show my understanding of fractions compared to its sum of fractions.          A mixed number has a whole number part and a fraction part.          I can add and subtract mixed numbers by replacing them with equivalent fractions.          A comparison of fractions is most meaningful when the fractions are the parts of the same size whole.          I cause a benchmark fraction to help me compare fractions with different numerators and denominators.          When I add fractions, I am joining parts that refer to the same whole.          When I subtract fractions, I am removing parts of a whole.          I can use what I know about adding and subtracting whole numbers to multiply a fraction and a whole number.          I can use pictures or a model to represent multiplying a fraction by whole number by understanding a fraction <math>a/b</math> as a multiple <math>1/b</math>, and a multiple <math>a/b</math> and a multiple <math>1/b</math>.          I can use the principle <math>a/b = (n \times a)/(n \times b)</math> to show and create equivalent fractions.          I can draw pictures to show my understanding of fraction equivalence and ordering.</p>
--	--

<b>Differentiation</b>		
<b>504</b>	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>

<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
<b>IEP</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>
<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		
<ul style="list-style-type: none"> <li>● Creativity</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> </ul>	

<ul style="list-style-type: none"> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Communication</li> <li>● Collaboration</li> </ul>
<b>Integrating Technology</b>	
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>

<b>Subject: Math</b>	<b>Grade: 4</b>	<b>Unit: 3</b> Extend Multiplication Concepts to Fractions; Represent and Interpret Data on Line Plots; Understand and Compare Decimals; Find Equivalence in Units of Measure; Generate and Analyze Patterns; Understand Concepts of Angles and Angle Measurements; Lines, Angles, and Shapes	<b>3rd Trimester (View Pacing Guide for specific details)</b>
<b>Content Standards</b>	<b>Suggested Standards for Mathematical Practice</b>	<b>Critical Knowledge &amp; Skills</b>	

<p>4.NF.A.1. Explain why a fraction <math>a/b</math> is equivalent to a fraction <math>(n \times a)/(n \times b)</math> 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.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Equivalent fractions are the same size while the number and size of the parts differ.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• explain, using visual fraction models, why two fractions are equivalent.</li> <li>• generate equivalent fractions, using fraction <math>a/b</math> as equivalent to fraction <math>(n \times a)/(n \times b)</math>.</li> </ul> <p>Learning Goal 6: Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models.</p>
<p>4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as <math>1/2</math>. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Fractions may only be compared when the two fractions refer to the same whole.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• create common denominators in order to compare two fractions.</li> <li>• create common numerators in order to compare two fractions.</li> <li>• compare two fractions with different numerators and different denominators by comparing to a benchmark fraction.</li> </ul>

		<ul style="list-style-type: none"> <li>record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</li> </ul> <p>Learning Goal 7: Compare two fractions with different numerators or different denominators, recording comparison with <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justifying the conclusion using visual fraction models.</p>
<p>4.NF.B.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: <math>\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}</math> ; <math>\frac{3}{8} = \frac{1}{8} + \frac{2}{8}</math> ; <math>2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}</math>.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>Some fractions can be decomposed.</li> <li>Addition/subtraction of fractions is joining/separating parts referring to the same whole.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>decompose a fraction into a sum of fractions with the same denominator in more than one way.</li> <li>write decompositions of fractions as an equation.</li> <li>develop visual fraction models that represent decomposed fractions and use them to justify decompositions.</li> </ul> <p>Learning Goal 8: Decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition as an equation; justify the decomposition with a visual fraction model.</p>

<p>4.NF.B.3c. Add and subtract mixed numbers with like 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.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Some fractions can be decomposed.</li> <li>• Addition/subtraction of fractions is joining/separating parts referring to the same whole.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add and subtract fractions having like denominators in order to solve real world problems.</li> <li>• develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions.</li> <li>• add and subtract mixed numbers with like denominators.</li> </ul> <p>Learning Goal 1: Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction.</p> <p>Learning Goal 2: Solve word problems involving addition and subtraction of fractions having like denominators using visual fraction models and equations to represent the problem.</p>
<p>4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Some fractions can be decomposed.</li> <li>• Addition/subtraction of fractions is joining/separating parts referring to the same whole.</li> </ul>



<p>fraction models and equations to represent the problem</p>	<p>and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p>	<p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add and subtract fractions having like denominators in order to solve real world problems.</li> <li>• develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions.</li> <li>• add and subtract mixed numbers with like denominators.</li> </ul> <p>Learning Goal 1: Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction.</p> <p>Learning Goal 2: Solve word problems involving addition and subtraction of fractions having like denominators using visual fraction models and equations to represent the problem.</p>
<p>4.NF.B.4a. Understand a fraction <math>\frac{a}{b}</math> as a multiple of <math>\frac{1}{b}</math>. For example, use a visual fraction model to represent <math>\frac{5}{4}</math> as the product <math>5 \times (\frac{1}{4})</math>, recording the conclusion by the equation <math>\frac{5}{4} = 5 \times (\frac{1}{4})</math>.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Fraction Multiplication: any fraction <math>\frac{a}{b}</math> as a multiple of fraction <math>\frac{1}{b}</math>.</li> <li>• Fraction Multiplication: any multiple of fraction <math>\frac{a}{b}</math> is also a multiple of fraction <math>\frac{1}{b}</math>.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• represent <math>\frac{a}{b}</math> as <math>a \times (\frac{1}{b})</math> using a visual fraction model.</li> <li>• represent <math>n \times (\frac{a}{b})</math> as <math>(n \times a)/b</math> in a visual fraction model.</li> </ul>

		<ul style="list-style-type: none"> <li>• multiply a fraction by a whole number.</li> <li>• solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem.</li> </ul> <p>Learning Goal 4: Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction <math>a/b</math> as a multiple of <math>1/b</math>.</p> <p>Learning Goal 5: Multiply a fraction by a whole number, using a visual fraction model and equations to demonstrate that a multiple of <math>a/b</math> is the product of <math>1/b</math> and a whole number.</p> <p>Learning Goal 6: Solve 1-step word problems involving multiplication of a fraction by a whole number, using visual fraction models and equations to represent the problem</p>
<p>4.NF.B.4b. Understand a multiple of <math>a/b</math> as a multiple of <math>1/b</math>, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express <math>3 \times (2/5)</math> as <math>6 \times (1/5)</math>, recognizing this product as <math>6/5</math>. (In general, <math>n \times (a/b) = (n \times a)/b</math>.)</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Fraction Multiplication: any fraction <math>a/b</math> as a multiple of fraction <math>1/b</math>.</li> <li>• Fraction Multiplication: any multiple of fraction <math>a/b</math> is also a multiple of fraction <math>1/b</math>.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• represent <math>a/b</math> as <math>x (1/b)</math> using a visual fraction model.</li> </ul>

	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure</p>	<ul style="list-style-type: none"> <li>• represent <math>n \times (a/b)</math> as <math>(n \times a)/b</math> in a visual fraction model.</li> <li>• multiply a fraction by a whole number.</li> <li>• solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem.</li> </ul> <p>Learning Goal 4: Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction <math>a/b</math> as a multiple of <math>1/b</math>.</p> <p>Learning Goal 5: Multiply a fraction by a whole number, using a visual fraction model and equations to demonstrate that a multiple of <math>a/b</math> is the product of <math>1/b</math> and a whole number.</p> <p>Learning Goal 6: Solve 1-step word problems involving multiplication of a fraction by a whole number, using visual fraction models and equations to represent the problem</p>
--	--	--

<p>4.NF.B.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat <math>\frac{3}{8}</math> of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Fraction Multiplication: any fraction <math>\frac{a}{b}</math> as a multiple of fraction <math>\frac{1}{b}</math>.</li> <li>• Fraction Multiplication: any multiple of fraction <math>\frac{a}{b}</math> is also a multiple of fraction <math>\frac{1}{b}</math>.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• represent <math>\frac{a}{b}</math> as <math>a \times (\frac{1}{b})</math> using a visual fraction model.</li> <li>• represent <math>n \times (\frac{a}{b})</math> as <math>(n \times a)/b</math> in a visual fraction model.</li> <li>• multiply a fraction by a whole number.</li> <li>• solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem.</li> </ul> <p>Learning Goal 4: Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction <math>\frac{a}{b}</math> as a multiple of <math>\frac{1}{b}</math>.</p> <p>Learning Goal 5: Multiply a fraction by a whole number, using a visual fraction model and equations to demonstrate that a multiple of <math>\frac{a}{b}</math> is the product of <math>\frac{1}{b}</math> and a whole number.</p> <p>Learning Goal 6: Solve 1-step word problems involving multiplication of a fraction by a whole number, using visual</p>
--	--	---

		fraction models and equations to represent the problem
<p>4.NF.C.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</p>	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Equivalent Fractions</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add two fractions with respective denominators of 10 and 100 using equivalent fractions.</li> </ul> <p>Learning Goal 7: Add two fractions with respective denominators of 10 and 100 by writing each fraction with denominator 100.</p>

<p>4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as <math>\frac{62}{100}</math>; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</p>	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>Relationship between place value (decimals) and fraction</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>write a decimal as a fraction that has a denominator of 10 or 100.</li> </ul> <p>Learning Goal 8: Given decimal notation, write fractions having denominators of 10 or 100.</p>
<p>4.NF.C.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual model</p>	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>represent a decimal using a model.</li> <li>compare two decimals to hundredths by reasoning about their size.</li> <li>explain that comparisons are valid only when the two decimals refer to the same whole.</li> <li>record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions (e.g., by using a visual model).</li> </ul> <p>Learning Goal 9: Compare two decimals to hundredths by reasoning about their size, demonstrating that comparisons are valid only when the two decimals refer to the same whole; record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual</p>

		model.
<p>4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).</p>	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Relative sizes of measurements (e.g. a kilometer is 1000 times as long as a meter and 100,000 times as long as a centimeter).</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• express measurements of a larger unit in terms of a smaller unit (within a single measurement system) (e.g. convert hours to minutes, kilometers to centimeters, etc).</li> <li>• generate a two-column table to record measurement equivalents.</li> </ul> <p>Learning Goal 3: Express measurement in a larger unit in terms of a smaller unit and record equivalent measures in a two-column table.</p>

<p>4.MD.A.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• solve word problems (using addition, subtraction and multiplication) involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals.</li> <li>• solve word problems (using all four operations) involving whole number distances, intervals of time, liquid volumes, masses of objects, and money, including problems requiring expressing measurements given in a larger measurement unit in terms of a smaller measurement unit (conversion).</li> <li>• construct diagrams (e.g. number line diagrams) to represent measurement quantities.</li> </ul> <p>Learning Goal 10: Solve word problems involving simple fractions or decimals that incorporate measurement comparisons of like units (including problems that require measurements given in a larger unit in terms of a smaller unit).</p>
--	---	---



<p>4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor</p>	<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• solve real world and mathematical problems by finding the area of rectangles using a formula.</li> <li>• solve real world and mathematical problems by finding the perimeter of rectangles using a formula.</li> </ul> <p>Learning Goal 5: Solve real world problems with whole numbers by finding the area and perimeter of rectangles using formulas.</p>
<p>4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p>	<p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• given a data set consisting of measurements in fractions of a unit, create a line plot.</li> <li>• using measurement information presented in line plots, add and subtract fractions with like denominators in order to solve problems.</li> </ul> <p>Learning Goal 3: Make a line plot to display a data set in measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>) and use it to solve problems involving addition and subtraction of fractions with like denominators.</p>

<p>4.MD.C.5a. 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. An angle that turns through <math>\frac{1}{360}</math> of a circle is called a “one-degree angle,” and can be used to measure angles.</p>	<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Angles are formed by two rays sharing a common endpoint and result from the rotation of one ray around the endpoint.</li> <li>• Angle Measurement: An angle that turns through <math>n</math> one-degree angles is said to have an angle measure of <math>n</math> degrees.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• describe an angle as measured with reference to a circle with the center of the circle being the common endpoint of the rays.</li> <li>• explain a ‘one-degree angle’ and its relation to a circle; a “degree” is defined as <math>\frac{1}{360}</math> (one degree angle) of the entire circle.</li> </ul> <p>Learning Goal 4: Explain angles as geometric shapes formed by two rays sharing a common endpoint and explain the relationship between a one-degree angle, a circle, and angle measure.</p>
---	---	--

<p>4.MD.C.5b. An angle that turns through <math>n</math> one-degree angles is said to have an angle measure of <math>n</math> degrees.</p>	<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Angles are formed by two rays sharing a common endpoint and result from the rotation of one ray around the endpoint.</li> <li>• Angle Measurement: An angle that turns through <math>n</math> one-degree angles is said to have an angle measure of <math>n</math> degrees.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• describe an angle as measured with reference to a circle with the center of the circle being the common endpoint of the rays.</li> <li>• explain a ‘one-degree angle’ and its relation to a circle; a “degree” is defined as <math>\frac{1}{360}</math> (one degree angle) of the entire circle.</li> </ul> <p>Learning Goal 4: Explain angles as geometric shapes formed by two rays sharing a common endpoint and explain the relationship between a one-degree angle, a circle, and angle measure.</p>
--	---	--

<p>4.MD.C.6. Measure angles in whole number degrees using a protractor. Sketch angles of specified measure.</p>	<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• measure angles in whole-number degrees.</li> <li>• given an angle measure, sketch the angle.</li> </ul> <p>Learning Goal 5: Measure angles in whole number degrees using a protractor and sketch angles of specific measures.</p>
<p>4.MD.C.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Angle measures may be added; when an angle is decomposed into non overlapping parts, the angle measure of the whole (original angle) is the sum of the angle measures of the parts.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add and subtract to find unknown angles on a diagram in real world and mathematical problems.</li> <li>• write an equation with a symbol for the unknown angle measure.</li> </ul> <p>Learning Goal 6: Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems using a symbol for an unknown angle measure.</p>

<p>4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *(benchmarked)</p>	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.4 Model with mathematics.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Proper use of the equal sign.</li> <li>• Improper use of the equal sign (e.g. <math>3 + 7 = 10 - 5 = 5</math> is incorrect).</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• solve multi-step word problems involving any of the four operations.</li> <li>• solve multi-step word problems involving interpretation (in context) of a remainder.</li> <li>• write equations to represent multi-step word problems, using a letter to represent the unknown quantity.</li> <li>• explain why an answer is reasonable.</li> <li>• use mental computation and estimation strategies to determine whether an answer is reasonable.</li> </ul> <p>Learning Goal 7: Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies.</p>
---	---	---

<p>4.OA.B.4. 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 factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.</p>	<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Whole numbers are a multiple of each of its factors.</li> <li>• Prime numbers do not have factors other than 1 and the number itself.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• find all factor pairs for any whole number (between 1 and 100).</li> <li>• given a one-digit number, determine whether a given whole number (between 1 and 100) is a multiple of the one-digit number.</li> <li>• determine whether a given whole number (between 1 and 100) is prime or composite.</li> </ul> <p>Learning Goal 1: Find all factor pairs for a whole number up to 100 and determine whether it is a multiple of a given 1-digit whole number and whether it is prime or composite.</p>
---	---	---

<p>4.OA.C.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p>	<p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Patterns contain features that are not explicitly stated in the rule defining the numerical pattern.</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• produce number patterns from a given rule.</li> <li>• produce shape patterns from a given rule.</li> <li>• analyze a sequence of numbers in order to identify features that are not obvious explicitly stated in the rule.</li> </ul> <p>Learning Goal 2: Generate a number or shape pattern that follows a rule and identify features of the pattern that are not explicit in the rule.</p>
<p>4.NBT.B.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p>	<p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• add multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> <li>• subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency.</li> </ul> <p>Learning Goal 1: Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p>

<p>4.NBT.B.5. 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>MP.7 Look for and make use of structure.</p>	<p>. Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values.</li> <li>• multiply two two-digit numbers using strategies based on place value.</li> <li>• represent these operations with equations, rectangular arrays, and area models.</li> <li>• explain the calculation by referring to the model (equation, array, or area model).</li> </ul> <p>Learning Goal 2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular arrays, and area models.</p>
<p>4.NBT.B.6. 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. Illustrate and explain the calculation by using equations,</p>	<p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• 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 the relationship between multiplication and division.</li> <li>• represent these operations with equations, rectangular</li> </ul>



<p>rectangular arrays, and/or area models.</p>		<p>arrays, and area models.</p> <ul style="list-style-type: none"> <li>• explain the calculation by referring to the model (equation, array, or area model).</li> </ul> <p>Learning Goal 3: Divide a whole number of up to four-digits by a one-digit divisor; represent and explain the calculation using equations, rectangular arrays, and area models.</p>
<p>4.G.A.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two dimensional figures.</p>	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• draw points, lines, line segments and rays.</li> <li>• draw angles (right, acute, obtuse).</li> <li>• draw perpendicular and parallel lines.</li> <li>• distinguish between lines, line segments, and rays.</li> <li>• identify points, lines, line segment, rays, right angles, acute angles, obtuse angles, perpendicular lines and parallel lines in two-dimensional figures.</li> </ul> <p>Learning Goal 1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in</p>

		two dimensional figures.
<p>4.G.A.2. Classify 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. Recognize right triangles as a category, and identify right triangles.</p>	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Trapezoid is a quadrilateral with at least one pair of parallel sides. Students are able to:</li> <li>• classify triangles based on the presence or absence of perpendicular lines and based on the presence or absence of angles of a particular size.</li> <li>• classify quadrilaterals based on the presence or absence of parallel or perpendicular lines and based on the presence or absence of angles of a particular size.</li> </ul> <p>Learning Goal 2: Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a particular size; recognize right angles as a category, and identify right, acute, obtuse, equilateral, isosceles, and scalene triangles.</p>

<p>4.G.A.3. Recognize 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. Identify line symmetric figures and draw lines of symmetry.</p>	<p>MP.5 Use appropriate tools strategically.</p> <p>MP.7 Look for and make use of structure.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• fold a figure along a line in order to create matching parts.</li> <li>• identify lines of symmetry as a line across the figure such that the figure can be folded along the line into matching parts.</li> <li>• identify figures having line symmetry.</li> <li>• draw lines of symmetry.</li> </ul> <p>Learning Goal 3: Draw lines of symmetry and identify line-symmetric figures.</p>
--	--	--

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>● Quick Writing</li> <li>● Whiteboard work/Slatework</li> <li>● Exit tickets</li> <li>● Entrance Tickets</li> <li>● Checks for Understanding (Quick Checks)</li> <li>● Quizzes</li> <li>● Small group activities</li> <li>● Pre-Assessment</li> <li>● Teacher’s observation</li> <li>● Kahoot</li> <li>● Quizlet</li> </ul>	<ul style="list-style-type: none"> <li>● Test</li> <li>● Common Assessment</li> <li>● Post Unit Assessment</li> <li>● Performance Base Assessment</li> <li>● Benchmark Assessment</li> </ul>
<b>Suggested Primary Resources</b>	<b>Suggested Supplemental Resources</b>

enVisions Mathematics	IXL - Activities (List) Anchor Charts Games Reflex Math Prodigy
<b>Cross-Curricular Connections &amp; 21<sup>st</sup> Century Skills</b>	
<ul style="list-style-type: none"> <li>● Open ended math problems using language from ELA (Building Math Literacy-enVision)</li> <li>● Math Read Alouds</li> <li>● Youtube Videos</li> <li>● STEM Activities (enVision)</li> <li>● 3 Act Plays (enVision)</li> </ul>	
<b>Essential Questions</b>	<b>Enduring Understanding</b>
<ul style="list-style-type: none"> <li>● What are equivalent fractions?</li> <li>● What are improper fractions?</li> <li>● How are fractions compared?</li> <li>● How are fractions with different numerators and denominators compared?</li> <li>● How can I decompose a fraction?</li> <li>● What is a mixed number?</li> <li>● How can I add and subtract mixed numbers with like denominators?</li> <li>● How can I add fractions?</li> <li>● How can I subtract fractions?</li> <li>● How can I show my understanding of multiplying a fraction by a whole number in word problems?</li> <li>● How can I multiply fractions?</li> <li>● How can I multiply a fraction and a whole number?</li> <li>● How can I generate equivalent fractions?</li> <li>● In Word Problems, how can I show my understanding of fraction equivalence and ordering?</li> <li>● What is a decimal?</li> <li>● How are decimals and fractions related?</li> <li>● How can I compare decimals?</li> </ul>	<ul style="list-style-type: none"> <li>● Fractions that name the same amount are equivalent fractions.</li> <li>● Improper fractions are fractions that have a numerator that is greater than or equal to its denominator.</li> <li>● I can use an equation to show my understanding of fractions compared to it's sum of fractions.</li> <li>● A mixed number has a whole number part and a fraction part.</li> <li>● I can add and subtract mixed numbers by replacing them with equivalent fractions.</li> <li>● A comparison of fractions is most meaningful when the fractions are the parts of the same size whole.</li> <li>● I cause a benchmark fraction to help me compare fractions with different numerators and denominators.</li> <li>● When I add fractions, I am joining parts that refer to the same whole.</li> <li>● When I subtract fractions, I am removing parts of a whole.</li> <li>● I can use what I know about adding and subtracting whole numbers to multiply a fraction and a whole number.</li> <li>● I can use pictures or a model to represent multiplying a fraction by whole number by understanding a fraction <math>a/b</math> as a multiple <math>1/b</math>, and a multiple <math>a/b</math> and a multiple <math>1/b</math>.</li> <li>● I can use the principle <math>a/b = (n \times a)/(n \times b)</math> to show and create equivalent fractions.</li> </ul>

- What are points, lines and planes?
- What is a line segment?
- What is a ray?
- What are intersecting, parallel, and perpendicular lines?
- How is an angle formed?
- What are the different types of angles, and their degrees of measurement?
- How can you measure an angle?
- How can you solve word problems to find unknown?
- What is a triangle?
- What is a polygon?
- What makes an object have symmetry?

- I can draw pictures to show my understanding of fraction equivalence and ordering.
- A decimal is a number that shows multiples of  $\frac{1}{10}$  and  $\frac{1}{100}$  by using a decimal point.
- Comparing two decimals involves deciding which decimal is less than the other or which decimal is greater than the other.
- Points, lines and planes are the building blocks of geometric figures.
- A point is a single location or position.
- A line is a straight path that goes on forever in both directions.
- A plane is a flat surface that goes on forever in all directions.
- A line segment is a part of a line with two endpoints.
- A ray is a part of a line that begins at one endpoint and goes on forever in one direction.
- Intersecting lines are lines that meet at a point.
- Parallel lines are lines that are in the same plane and do not intersect.
- Perpendicular lines are lines that intersect and form right angles.
- An angle is formed by two rays with a common endpoint (vertex).
- I can use a protractor to measure angles.
- A right angle measures 90 degrees.
- A straight angle measures 180 degrees.
- An acute angle measures greater than 0 degrees, but less than 90 degrees.
- An obtuse angle measures greater than 90 degrees but less than 180 degrees.
- I can use addition and subtraction problems to find the unknown angles.
- A triangle is a figure with three sides and is named by the length of its sides.
- A polygon is a closed plane figure made up of three or more sides and named by the number of sides and angles it has.
- A figure has symmetry when it can be folded so that its two halves match

## Differentiation

<b>504</b>	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>
<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
<b>IEP</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>

<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		
<ul style="list-style-type: none"> <li>● Creativity</li> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> <li>● Communication</li> <li>● Collaboration</li> </ul>	
<b>Integrating Technology</b>		
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>	

# Appendix A

**Audubon Public Schools**  
**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**  
**Written By: Beth Canzanese**  
**Revised By: Nicole Racite**  
**Approved June 2017**  
**Course Title: Fourth Grade Math      Unit Name: Operations and Algebraic Thinking**  
**Grade Level 4**

<b>Content Statements</b> Using addition, subtraction, multiplication and division to compute answers to solve real world problems. Review and application of multiplication and division facts and strategies for mentally computing products and quotients. Use of variables to solve multiplication and division problems.	<b>NJSLS:</b> 4.OA.1- 5 4.NBT.5-6
--	---



<p><b>Overarching Essential Questions</b></p> <p>How can I multiply equal sized groups?  How can I easily multiply with multiples of 10, 100 and 1,000?  How can I solve problems using variables?  How can I multiply multi digit numbers?  What division facts do I need to know?  What are some division strategies?  How can I use estimation to make sure my answer is correct?  What is a factor?  What kinds of patterns will help me solve problems?</p>	<p><b>Overarching Enduring Understandings</b></p> <p>I can see and use patterns when I multiply with multiples.  I can use the associative, commutative, identity and zero properties of multiplication to figure out problems involving variables.  I can multiply multi digit numbers to solve problems by lining up the digits with the same place values.  The answer to a division problem is the quotient.  The number you are dividing by is the divisor.  The number being divided is the dividend.  The number that is left over, if there is one, is the remainder, which is always less than the divisor.  I can use equal sharing, grouping and repeated subtraction when I am solving a division problem.  I can divide greater numbers by following divide and multiply steps.  I can estimate to check if my exact answer is close.  I can use compatible numbers to make estimation easier.  When I can divide a whole number by another whole number, with no remainder, each of the two whole numbers is a factor.  I can use facts to divide multiples of 10, 100 and 1,000.  There are geometric and number patterns.</p>
<p><b>Unit Essential Questions</b></p> <p>What are ways I can multiply?  How can I multiply and divide to solve word problems?  How can we solve multi-step word problems?  How can we solve multi-step word problems with remainders?  How can I find the answer to a multiplication problem?  What is the commutative property of multiplication?  What is the associative property of multiplication?  What is the identity property of multiplication?  What is the distributive property of multiplication?</p>	<p><b>Unit Enduring Understandings</b></p> <p>I can use an array or area model to multiply.  I can use pictures, to model, and an equation using a symbol to represent the unknown.  I can use repeated addition, skip counting, using doubles and adding on to a fact to answer multiplication questions.  The commutative property of multiplication is - the order of the factors does not change the product.</p>

<p>What are some ways I can use the distributive property?          What are multiplication patterns?          How can I continue a given pattern ?          How can I interpret a multiplication problem?          What are the multiples of 10?          How can I solve division problems?          How can multiplication help me to divide?          What is the relationship between multiplication and division?          How can I identify factor pairs?          How is a whole number a multiple of its factors?          How are multiples and factors related?          How can we find the multiples of whole numbers?          What are prime and composite numbers?          How can I multiply a whole number of up to four digits by a one-digit whole number?          How can I multiply two two digit numbers?          How can I find whole-number quotients with remainders having up to 4-digit dividends and one-digit divisors?</p>	<p>The associative property of multiplication is – when I multiply 3 numbers, the way the numbers are grouped does not change the product.          The identity property of multiplication is – when I multiply 1 and any number, the product is that same number.          I can use the distributive property to rename one factor as a sum and multiply greater numbers.          I can use the distributive property when I am solving word problems.          The distribution property is – when I multiply the sum of 2 numbers by a 3<sup>rd</sup> number, it is the same as multiplying each addend by the 3<sup>rd</sup> number and adding the product.          Patterns in a multiplication table make it easy to learn and remember multiplication facts.          I can use the given pattern rule to interpret what comes next in the series.          I understand that <math>45 = 5 \times 9</math>, which is a statement that says 45 is 5 times as many as 9 and 9 times as many as 5.          A multiple of a whole number is found by multiplying that number by any other number.          I understand that a whole number is a multiple of its factors.          When I multiply 2 even numbers, the product is even.          When I multiply 2 odd numbers, the product is odd.          When I multiply an even and an odd product, the number will be even.          Multiples of 10 are 10,20,30,40 and so on.          I can use addition, subtraction, multiplication, and division to solve multi-step word problems.          I can use equal sharing and rectangular array to solve word problems that involve division.          Knowing multiplication facts will help me remember division facts.</p>
---	--

	<p>Multiplication and division are opposites.  I can use place value strategies and the properties of operation to help me multiply.  I can use place value strategies, properties of operation, and knowledge of the relationship between multiplication and division to find quotients.</p>
<p><b>Unit Rationale</b>  Multiplication and division are essential to solving everyday problems involving math. Students must begin to apply the rudimentary elements of multiplication and division in order to solve real world problems. They can then begin to solve more complex mathematical problems and challenges</p>	<p><b>Unit Overview</b>  Students will use addition, subtraction, multiplication and division to compute answers to solve real world problems. They will review and apply multiplication and division facts and strategies for mentally computing products and quotients. They will also use variables to solve multiplication and division problems.  Students will apply these skills to solve real world problems by using manipulatives and word problem challenges.</p>
<p><b>Suggested Activities</b></p> <p>My Math-Chapters 3-6</p> <p>Provide students with opportunities to explain their reasoning using visual models.</p> <p><b>Additional Resources:</b> Reflex Math (Multiplication &amp; Division), IXL (Multiplication, Division, Mixed operations, Patterns and sequences, Logical reasoning), fact fluency practice</p>	

**Audubon Public Schools**  
**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**  
**Written By: Beth Canzanese**  
**Revised By: Nicole Racite**  
**Approved June 2017**

**Course Title: Fourth Grade Math      Unit Name: Number and Operations - Fractions**  
**Grade Level: 4**

<p><b>Content Statements</b>          Find equivalent fractions; change mixed numbers to improper fractions, change improper fractions to mixed numbers and compare fractions. Understand the connection between decimals and fractions; compare and order decimals.</p>	<p><b>NJSLS:</b>          4.NF.1-7</p>
<p><b>Overarching Essential Questions</b>          How will knowing how to use fractions help me solve complex mathematical problems?</p>	<p><b>Overarching Enduring Understandings</b>          Fractions are connected to decimals. Understanding decimals enables me to perform the mathematics I need for higher level problems.</p>
<p><b>Unit Essential Questions</b>          What are equivalent fractions?          What are improper fractions?          How are fractions compared?          How are fractions with different numerators and denominators compared?          How can I decompose a fraction?          How can I          What is a mixed number?          How can I add and subtract mixed numbers with like denominators?          How can I add fractions?          How can I subtract fractions?</p>	<p><b>Unit Enduring Understandings</b>          Fractions that name the same amount are equivalent fractions.          Improper fractions are fractions that have a numerator that is greater than or equal to its denominator.          I can use an equation to show my understanding of fractions compared to it's sum of fractions.          A mixed number has a whole number part and a fraction part.          I can add and subtract mixed numbers by replacing them with equivalent fractions.          A comparison of fractions is most meaningful when the fractions are the parts of the same size whole.</p>

<p>How can I show my understanding of multiplying a fraction by a whole number in word problems?  How can I multiply fractions?  How can I multiply a fraction and a whole number?  How can I generate equivalent fractions?  In Word Problems, how can I show my understanding of fraction equivalence and ordering?  What is a decimal?  How are decimals and fractions related?  How can I compare decimals?</p>	<p>I cause a benchmark fraction to help me compare fractions with different numerators and denominators.  When I add fractions, I am joining parts that refer to the same whole.  When I subtract fractions, I am removing parts of a whole.  I can use what I know about adding and subtracting whole numbers to multiply a fraction and a whole number.  I can use pictures or a model to represent multiplying a fraction by whole number by understanding a fraction <math>a/b</math> as a multiple <math>1/b</math>, and a multiple <math>a/b</math> and a multiple <math>1/b</math>.  I can use the principle <math>a/b = (n \times a)/(n \times b)</math> to show and create equivalent fractions.  I can draw pictures to show my understanding of fraction equivalence and ordering.  A decimal is a number that shows multiples of <math>1/10</math> and <math>1/100</math> by using a decimal point.  Comparing two decimals involves deciding which decimal is less than the other or which decimal is greater than the other.</p>
<p><b>Unit Rationale</b>  The introduction of decimals will enable students to apply their whole number and fraction skills to complex problems.</p>	<p><b>Unit Overview</b>  Students will find equivalent fractions; change mixed numbers to improper fractions, change improper fractions to mixed numbers and compare fractions. They will also understand the connection between decimals and fractions; compare and order decimals. They will practice by solving problems.</p>

**Suggested Activities**

My Math- Chapters 8-10

Provide students with opportunities to explain their reasoning using visual models.

**Additional Resources:** IXL (Fraction equivalence and ordering, Add and subtract fractions with like denominators, Add and subtract fractions with unlike denominators, Multiply fractions, Decimals, Add and subtract decimals)

**Audubon Public Schools**  
**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**  
**Written By: Beth Canzanese**  
**Revised By: Nicole Racite**  
**Approved June 2017**

**Course Title Fourth Grade Math      Unit Name: Numbers and Operations in Base Ten**  
**Grade Level: 4**

<b>Content Statements</b> Use of place value and base-ten numerals to represent, compare, round, add, and subtract whole numbers.	<b>NJSLS:</b> 4.NBT. 1-4 4.OA. 3
<b>Overarching Essential Questions</b> Why do I need to know how to compare, round, add or subtract whole numbers?	<b>Overarching Enduring Understandings</b> I will compare, round, add or subtract whole numbers in everyday life.

<b>Unit Essential Questions</b>	<b>Unit Enduring Understandings</b>
<p>What is a place value table?            How can I use a place value chart?            How can I use place value to compare two numbers?            How can I show my understanding of place value using computation?            What is estimation?            Why do I have to learn to estimate?            How can I add whole numbers?            What is a variable?            What are the parts to a subtraction problem?            How can I use the standard algorithm to fluently add a multi-digit whole number?</p> <p>How can I use the standard algorithm to fluently subtract a multi-digit whole number?</p>	<p>A place value table helps me to recognize the value of each digit in a number. I can use place value tables to solve problems.            I can round multi-digit whole numbers using place value.            I can use a place value table to determine if a number is greater or lesser than another.            The digit to the left is ten times bigger than the digit to the right.            I can use symbols <math>&lt;</math>, <math>&gt;</math>, <math>=</math> to compare numbers.            I can use partial products to show my understanding of place value.</p> <p>Estimation is rounding to the nearest 10, 100, 1,000 and so on.            Estimation helps me what the answer to a problem should be close to.            I can add whole numbers by lining up places and adding each column, remembering to regroup when the sum in any column is greater than 9.            I can subtract whole numbers by lining up places and subtracting each column, remembering when to regroup when the bottom number is greater than the top number.            A variable is a letter that represents any number.            The 3 parts to a subtraction problem is the number I am subtracting from – minuend; the number I am subtracting – subtrahend; and the answer to the subtraction problem – difference.</p>

<p><b>Unit Rationale</b> Students need to have a foundation in subtraction estimation and place value tables so they can solve multi-digit mathematical problems.</p>	<p><b>Unit Overview</b> Students will use place value and base-ten numerals to represent, compare, round, add, and subtract whole numbers. They will practice with manipulatives and word problems.</p>
<p><b>Suggested Activities</b></p> <p>My Math-Chapters 1, 2</p> <p>Provide students with opportunities to explain their reasoning using visual models.</p> <p><b>Additional Resources:</b> Reflex (Addition &amp; Subtraction), IXL (Number sense, Addition, Subtraction, Mixed Operations, Logical reasoning)</p>	

**Audubon Public Schools**  
**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**  
**Written By: Beth Canzanese**  
**Revised By: Nicole Racite**  
**Approved June 2017**

**Course Title: Fourth Grade Math      Unit Name: Measurement and Data**  
**Grade Level: 4**

<p><b>Content Statements</b> Review length, weight, mass, capacity and time. Convert measurements from one unit to another with the same measurement system. Find the perimeter and area of rectangles. Representation and interpretation of data by using plots.</p>	<p><b>NJSLS:</b> 4.MD.1-4 4.NF.6</p>
---	--



<p><b>Overarching Essential Questions</b> How can I apply what I have learned about measurement?</p>	<p><b>Overarching Enduring Understandings</b> I can compare measurements, solve measurement problems and use line plots to interpret data.</p>
<p><b>Unit Essential Questions</b> What are customary units of length? What are metric units? How are units converted? How is time measured? How can I solve measurement problems? How can I solve measurement word problems? How can I measure the perimeter? How can I determine area? How can I show my understanding of area and perimeter in solving a word problem? What is a line plot used for?</p>	<p><b>Unit Enduring Understandings</b> A customary unit of length is inch, foot, yard and mile. A customary unit of capacity is cup, pint, quart and gallon. A customary unit of weight is ounce and pound. A metric unit of length is centimeter, meter and kilometer. A metric unit of capacity is liter and milliliter. A metric unit of mass is gram and kilogram. I can convert units within a category. Time is measured by seconds, minutes and hours. When I am solving measurement problems, it is helpful to create a table of equivalents for the given units. I can use the four operations to solve word problems involving whole numbers or fractions. Perimeter can be measured in customary or metric units. It is the sum of all of the object's sides. The formula for perimeter is <math>P=(2x) + (2xw)</math>. The formula for area is <math>A=l \times w</math> for a rectangle and <math>A=s \times s</math> for a square. I can use pictures and formulas for area and perimeter to solve word problems. I can make a line plot showing how closely grouped together or how spread out over a range the data are. I can use line plots to represent addition and subtraction of fractions.</p>

<p><b>Unit Rationale</b> Measurement and data analysis are the basis of understanding geometric shapes, composition and problem solving. Most applied math involves measurement.</p>	<p><b>Unit Overview</b> Students will review length, weight, mass, capacity and time. They will convert measurements from one unit to another with the same measurement system. They will also find the perimeter and area of rectangles. They will show the representation and interpretation of data by using plots.</p>
<p><b>Suggested Activities</b></p> <p>My Math- Chapters 11-13</p> <p>Provide students with opportunities to explain their reasoning using visual models.</p> <p><b>Additional Resources:</b> IXL(Units of measurement, Coordinate plane, Data and graphs)</p>	

**Audubon Public Schools**  
**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**  
**Written By: Beth Canzanese**  
**Revised By: Nicole Racite**  
**Approved June 2017**  
**Course Title: Fourth Grade Math      Unit Name: Geometry**  
**Grade Level: 4**

<p><b>Content Statements</b> Identify angles, lines and polygons; symmetric figures and lines of symmetry.</p>	<p><b>NJSLS:</b> 4.G.1-5 4.MD 5-7</p>
--	---

<p><b>Overarching Essential Questions</b> Why do I need to know about angles and symmetry?</p>	<p><b>Overarching Enduring Understandings</b> Understanding geometry will help me to solve problems having to do with design and construction.</p>
<p><b>Unit Essential Questions</b> What are points, lines and planes? What is a line segment? What is a ray? What are intersecting, parallel, and perpendicular lines? How is an angle formed? What are the different types of angles, and their degrees of measurement? How can you measure an angle? How can you solve word problems to find unknown? What is a triangle? What is a polygon?</p> <p>What makes an object have symmetry?</p>	<p><b>Unit Enduring Understandings</b> Points, lines and planes are the building blocks of geometric figures. A point is a single location or position. A line is a straight path that goes on forever in both directions. A plane is a flat surface that goes on forever in all directions. A line segment is a point of a line with two endpoints. A ray is a part of a line that begins at one endpoint and goes on forever in one direction. Intersecting lines are lines that meet at a point. Parallel lines are lines that are in the same plane and do not intersect. Perpendicular lines are lines that intersect and form right angles. An angle is formed by two rays with a common endpoint (vertex). I can use a protractor to measure angles. A right angle measures 90 degrees. A straight angle measures 180 degrees. An acute angle measures greater than 0 degrees, but less than 90 degrees. An obtuse angle measures greater than 90 degrees but less than 180 degrees. I can use addition and subtraction problems to find the unknown angles. A triangle is a figure with three sides and is named by the length of its sides.</p>

	<p>A polygon is a closed plane figure made up of three or more sides and named by the number of sides and angles it has.</p> <p>A figure has symmetry when it can be folded so that its two halves match</p>
<p><b>Unit Rationale</b> Understanding the attributes of shapes provides a foundation for recognizing, analyzing and drawing more complex shapes and enhances the student’s capacity to grasp that shared attributes can define a larger category.</p>	<p><b>Unit Overview</b> Students will identify angles, lines and polygons; symmetric figures and lines of symmetry. They will use manipulatives and word problems to investigate geometry.</p>
<p><b>Suggested Activities</b></p> <p>My Math- Chapter 14</p> <p>Provide students with opportunities to explain their reasoning using visual models.</p> <p><b>Additional Resources:</b> IXL (Three-dimensional figures, Geometric measurement)</p>	

## Appendix

<b>Differentiation</b>
------------------------

<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
<b>Intervention &amp; Modification</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> <li>● Graphic organizers</li> </ul>
<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>

### **21st Century Skills**

- Creativity
- Innovation
- Critical Thinking
- Problem Solving
- Communication
- Collaboration

### **Integrating Technology**

- Chromebooks
- Internet research
- Online programs
- Virtual collaboration and projects
- Presentations using presentation hardware and software