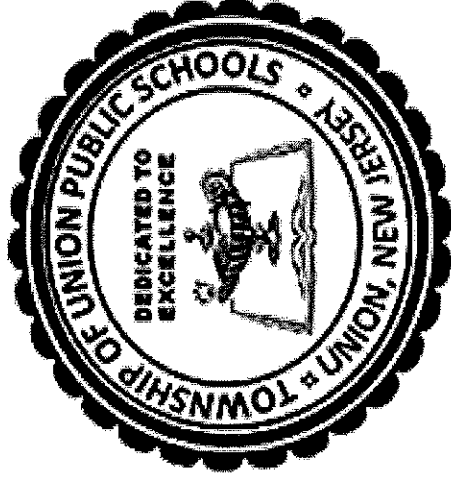


TOWNSHIP OF UNION PUBLIC SCHOOLS



Grade 4 / Mathematics

Updated June 18, 2019

Mission Statement

The mission of the Township of Union Public Schools is to build on the foundations of honesty, excellence, integrity, strong family, and community partnerships. We promote a supportive learning environment where every student is challenged, inspired, empowered, and respected as diverse learners. Through cultivation of students' intellectual curiosity, skills and knowledge, our students can achieve academically and socially, and contribute as responsible and productive citizens of our global community.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Course Description

This guide has been created to assist district Grade 4 teachers in meeting the goals required to master the standards outlined in the Curricular Framework for Mathematics. The framework is aligned to the New Jersey Student Learning Standards for Mathematics and reflect the skills and knowledge students need to succeed in college, career, and life.

Curriculum Units/Pacing Guide

Unit # / Title	Number of Days
Unit 1: Place Value & Operations with Whole Numbers	45
Unit 2: Multi-digit Arithmetic & Fraction Equivalence	45
Unit 3: Building Fractions & Decimal Notation	45
Unit 4: Geometry and Measurement	45

Unit Standards Overview

Overview	Standards	Unit Skills Focus	Content-Specific Practices (when applicable)
<p>Unit 1</p> <p>Title: Place Value & Operations with Whole Numbers</p>	<ul style="list-style-type: none"> • 4.OA.B.4 • 4.OA.C.5 • 4.MD.A.1 • 4.OA.A.1 • 4.OA.A.2 • 4.NBT.A.1 • 4.NBT.A.2 • 4.NBT.A.3 	<ul style="list-style-type: none"> • Gain familiarity with factors and multiples • Generate and analyze patterns • Solve problems involving measurement and conversion of measurements • Use the four operations with whole numbers to solve problems • Generalize place value understanding for multi-digit whole numbers 	<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>Suggested Resources <i>Provide links to specific resources/activities</i></p>	<p><u>4.OA.B Identifying Multiples</u> <u>4.OA.B Numbers in a Multiplication Table</u> <u>4.OA.C.5 Double Plus One</u> <u>4.MD.A.1 Who is the tallest?</u> <u>4.OA.A.2 Comparing Money Raised</u> <u>4.NBT.A.1 Thousands and Millions of Fourth Graders</u> <u>4.NBT.A.2 Ordering 4-digit numbers</u> <u>4.NBT.A.3 Rounding on the Number Line</u></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>
<p>Unit 2</p> <p>Title: Multi-digit Arithmetic & Fraction Equivalence</p>	<ul style="list-style-type: none"> • 4.NBT.B.4* • 4.NBT.B.5 • 4.NBT.B.6 • 4.OA.A.3* • 4.MD.A.3 • 4.NF.A.1 • 4.NF.A.2 • 4.NF.B.3a-b 	<ul style="list-style-type: none"> • Use place value understanding and properties of operations to perform multi-digit arithmetic • Use the four operations with whole numbers to solve problems • Solve problems involving measurement and conversion of 	<p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>

		<p>measurements</p> <ul style="list-style-type: none"> ● Extend understanding of fraction equivalence and ordering ● Build fractions from unit fractions 	
<p>Suggested Resources Provide links to specific resources/activities</p>	<p>4.NBT.B.To regroup or not to regroup 4.NBT.B.6 mental Division Strategy 4.OA.A.3, 4.MD.A.3 Karl's Garden 4.NF.A.1 Explaining Fraction Equivalence with Pictures 4.NF.A.1 Fractions and Rectangles 4.NF.A.2 Comparing Fractions Using Benchmarks Game 4.NF.A.2 Doubling Numerators and Denominators 4.NF.B.3a Comparing Sums of Unit Fractions 4.NF.B.3b making 22 Seventeenths in Different Ways</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>MP.8 Look for and express regularity in repeated reasoning.</p>
<p>Unit 3 Title: Building Fractions & Decimal Notation</p>	<ul style="list-style-type: none"> ● 4.NF.B.3c-d ● 4.MD.B.4 ● 4.NF.B.4a-c ● 4.NF.C.5 ● 4.NF.C.6 ● 4.NF.C.7 ● 4.MD.A.2 ● 4.NBT.B.4* 	<ul style="list-style-type: none"> ● Build fractions from unit fractions ● Represent and interpret data ● Understand decimal notation for fractions and compare decimal fractions. ● Solve problems involving measurement and conversion of measurements ● Use place value understanding and properties of operations to add and subtract 	
<p>Suggested Resources Provide links to specific resources/activities</p>	<p>4.NF.B.3c Cynthia's Perfect Punch 4.NF.B.3c Peaches 4.MD.B.4 Button Diameters 4.NF.B.4 Extending Multiplication From Whole Numbers to Fractions 4.NF.B.4c Sugar in six cans of soda 4.NF.C.5 Adding Tenths and Hundredths 4.NF.C.6 Dimes and Pennies 4.NF.C.6 Expanded Fractions and Decimals</p>		

	<p><u>4.NF.C.7 Using Place Value</u> <u>4.MD.A.2 Margie Buys Apples</u></p>	
<p>Unit 4 Title: Geometry and Measurement</p>	<ul style="list-style-type: none"> ● 4.G.A.1 ● 4.G.A.2 ● 4.G.A.3 ● 4.MD.C.5 ● 4.MD.C.6 ● 4.MD.C.7 ● 4.OA.A.3* ● 4.NBT.B.4* 	<ul style="list-style-type: none"> ● Draw and identify lines and angles, and classify shapes by properties of their lines and angles ● Understand concepts of angle and measure angles (Geometric measurement) ● Use the four operations with whole numbers to solve problems ● Use place value understanding and properties of operations to perform multi-digit arithmetic
<p>Suggested Resources <i>Provide links to specific resources/activities</i></p>	<p><u>4.G.A.1 The Geometry of Letters</u> <u>4.G.A.1 What's the Point?</u> <u>4.G.A.2 Are these right?</u> <u>4.G.A.2 Defining Attributes of Rectangles and Parallelograms</u> <u>4.G.A.3 Finding Lines of Symmetry</u> <u>4.G.A.3 Lines of symmetry for triangles</u> <u>4.MD.C.6, 4.MD.C.7, 4.G.A.1 Measuring Angles</u> <u>4.MD.C.7, 4.G.A.2 Finding an unknown angle</u> <u>4.OA.A.3 Carnival Tickets</u></p>	

Curricular Units

Unit 1 Grade 4

Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills
<ul style="list-style-type: none"> 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>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"> Whole numbers are a multiple of each of its factors. Prime numbers do not have factors other than 1 and the number itself. <p>Students are able to:</p> <ul style="list-style-type: none"> find all factor pairs for any whole number (between 1 and 100). given a one-digit number, determine whether a given whole number (between 1 and 100) is a multiple of the one-digit number. determine whether a given whole number (between 1 and 100) is prime or composite. <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>
<ul style="list-style-type: none"> 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. <i>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.</i> 	<p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Patterns contain features that are not explicitly stated in the rule defining the numerical pattern. <p>Students are able to:</p> <ul style="list-style-type: none"> produce number patterns from a given rule. produce shape patterns from a given rule. analyze a sequence of numbers in order to identify features that are not obvious explicitly stated in the rule. <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>

<ul style="list-style-type: none"> 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. <i>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).</i> 	<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"> 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). Students are able to: <ul style="list-style-type: none"> 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). generate a two-column table to record measurement equivalents. <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>
<ul style="list-style-type: none"> 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"> Multiplication equations represent comparisons. <p>Students are able to:</p> <ul style="list-style-type: none"> explain multiplication equations as comparisons. write multiplication equations given word problems indicating multiplicative comparison. <p>Learning Goal 4: Write multiplication equations from word problems indicating multiplicative comparisons and describe multiplication equations as comparisons.</p>
<ul style="list-style-type: none"> 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>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"> multiply to solve word problems involving multiplicative comparison. divide to solve word problems involving multiplicative comparison. represent problems with drawings and equations, using a symbol for the unknown number.

<ul style="list-style-type: none"> distinguish word problems involving multiplicative comparison from those involving additive comparison. <p>Learning Goal 5: Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations.</p>		
<p>Concept(s):</p> <ul style="list-style-type: none"> A quantitative relationship exists between the digits in place value positions of a multi-digit number. Explain that a digit in one place represents ten times what it would represent in the place to its right. <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>MP.7 Look for and make use of structure.</p>	<ul style="list-style-type: none"> 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. <i>For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.</i> [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]
<p>Concept(s):</p> <p>Students are able to:</p> <ul style="list-style-type: none"> Multiple representations of whole numbers exist. read and write multi-digit whole numbers using base-ten numerals. read and write multi-digit whole numbers using number names. read and write multi-digit whole numbers using expanded form. compare two multi-digit numbers using $>$, $=$, and $<$ symbols. <p>Learning Goal 7: Compare two multi-digit whole numbers (up to one million) using $>$, $=$, and $<$ for numbers presented as base ten numerals, number names, and/or in expanded form.</p>	<p>MP.7 Look for and make use of structure.</p>	<ul style="list-style-type: none"> 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 $>$, $=$, and $<$ 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>Concept(s):</p>	<p>MP.7 Look for and make use of structure.</p>	<ul style="list-style-type: none"> 4.NBT.A.3. Use place value understanding to round multi-digit

<p>whole numbers to any place. [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"> • Estimation <p>Students are able to:</p> <ul style="list-style-type: none"> • round whole numbers to any place. <p>Learning Goal 8: Round multi-digit whole numbers up to one million to any place.</p>
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Unit 1 Assessment Plan		
<p>Formative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p>Summative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	
<p>Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards.</p> <ul style="list-style-type: none"> -Sum Sense Smartboard Game (Addition and Subtraction) -Fluency Fact Quizzes (Multiplication facts 0-12) -Product Pile Up (Multiplication Center Game) -Sum Sense Smartboard Game (Multiplication and Division) -Exit Slips throughout each chapter based on EACH new skill taught (given BEFORE the mid-chapter checkpoint AND after; also given BEFORE Go Math Chapter Test) -Reteach/Enrich Supplemental worksheets (to help classify different abilities) -Small group direct instruction for struggling learners -One-on-one instruction (as needed) -Communicating in pairs, small group, or whole group presentations -Teacher observation -Student reflections/quick-writes on a particular lesson/skill -Homework 		<p>Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.</p> <ul style="list-style-type: none"> -Go Math Mid-Chapter Checkpoints -Chapters 1-5 (use as quiz grade) -Go Math Chapter Tests – Chapters 1-5 (use as test grade) -PARCC-style assessments, including extended constructed responses (ECR) -Projects -Benchmark Assessments -PARCC Assessment

Focus Mathematical Concepts
<p>Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate.</p> <p>Prerequisite skills: Reading and writing whole numbers up to the thousands; subtraction of multi-digit numbers with regrouping; subtraction of whole numbers across zeroes</p> <p>Common Misconceptions: Students learn multiplication facts 0-12 and are expected to “master” this ability by the end of 3rd grade; however, from year to year there is a clear deficiency with facts 6-12 that require months of drill practice before fluency occurs</p>

Number Fluency (for grades K-5):

Grade

- K Add/Subtract within 5
- 1 Add/Subtract within 10
- 2 Add/ Subtract within 20
- 3 Add/Subtract within 1,000; Multiplication and Division Facts 0-10
- 4 Fluently add and subtract multi-digit whole numbers using the standard algorithm ; Multiplication and Division Facts 0-12

Required Fluencies

- Add/Subtract within 5
- Add/Subtract within 10
- Add/ Subtract within 20
- Add/Subtract within 1,000; Multiplication and Division Facts 0-10
- Fluently add and subtract multi-digit whole numbers using the standard algorithm ; Multiplication and Division Facts 0-12

District/School Tasks

Exemplar tasks or illustrative models could be provided.

- iReady math practice
- Animated Go Math models
- Grab and Go activities (Go Math)
- Using technological resources and other 21st century skills to support and enhance mathematical understanding
- Using connections between pictures, oral language, written symbols, manipulative models, and real-world situations
- Classroom economy system in which students "do" math (exchanging money, balancing checkbook, etc)

District/School Primary and Supplementary Resources

District/school resources and supplementary resources that are texts as well as digital resources used to support the instruction.

- ECR resource book (grade level coordinator OR designated "math person" will house in their room)
- iReady website
- Illustrative Mathematics:
<https://www.illustrativemathematics.org/>
- Supplemental websites (various operations):
http://www.mathplayground.com/grade_4_games.html
<http://www.math-play.com/4th-grade-math-games.html>
http://www.abcya.com/fourth_grade_computers.htm
- Additional Digital Resources:
 - IXL: Adding Larger Numbers in Word Problems: <https://www.ixl.com/math/grade-4/add-two-numbers-up-to-seven-digits-word-problems>
 - IXL: Adding Numbers with and without Regrouping: <https://www.ixl.com/math/grade-4/add-two-numbers-up-to-seven-digits>
 - IXL: Subtracting Larger Numbers Word Problems: <https://www.ixl.com/math/grade-4/subtract-numbers-up-to-seven-digits-word-problems>
 - Home School Math ~ Teaching Long Division: <https://www.ixl.com/math/grade-4/subtract-numbers-up-to-seven-digits-word-problems>
 - IXL - Multi-Step Word Problems: <https://www.ixl.com/math/grade-4/multi-step-word-problems>

- www.explorellearning.com/index.cfm?method=cResource.dspDetail&ResourceID=102

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- <http://nlvm.usu.edu/en/nav/vlibrary.html>
- Study Jams- Order Whole Numbers:
<http://studyjams.scholastic.com/studyjams/jams/math/numbers/order-whole-numbers.htm>
- EZGames Ordering Game:
www.ezscool.com/Math/OrderNumbers/LeastToGreatest/OrderOrderLowtoHigh
- IXL: Rounding Whole Numbers: <https://www.ixl.com/math/grade-4/rounding-up-to-millions-place>

4 • www.explorellearning.com/index.cfm?method=cResource.dspDetail&ResourceID=102

- <http://nlvm.usu.edu/en/nav/vlibrary.html>
- Turtlediary.com ~ Properties of Addition: <https://www.turtlediary.com/game/properties-of-addition.html>
- IXL Properties of Addition: <https://www.ixl.com/math/grade-3/properties-of-addition>
- Math Playground ~ Algebraic Reasoning: www.mathplayground.com/algebraic_reasoning.html
- IXL ~ Multiply with Distributive Property: www.ixl.com/math/grade-4/multiply-using-the-distributive-property
- Math Playground ~ Three Digit by One Digit Multiplication Practice: www.mathplayground.com/multiplication04.html

Instructional Best Practices and Exemplars

This is a place to capture examples of standards integration and instructional best practices.

- Daily "Do Now" warm up
- Explicit teacher modeling of how to provide appropriate rationales for math work
- Turn and Talk
- Student modeling for struggling learners to learn from their peers
- Encouraging and facilitating the sharing of mathematical ideas, discussing mathematics amongst each other, and how to refine and critique each other's ideas and understandings
- Making interdisciplinary connections using reading texts
- Classroom economy system in which students "do" math (exchanging money, balancing checkbook, etc)
- Differentiated instruction based on students individual needs such as, but not limited to:
 - *Extra time for assigned tasks
 - *Timeline with due dates for projects
 - *Provide lecture notes/ outline
 - *Help students verbalize steps
 - *Repeat, clarify or reword instructions
 - *Mini breaks between tasks
 - *Visual and verbal reminders
 - *Provide immediate feedback
 - *Computer/whiteboard assistance

Unit 1 Suggested Modifications/Accommodations/Extension Activities		
English Language Learners (ELL) <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i>	Special Education / 504 <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i>	Gifted and Talented <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i>
Examples of Strategies and Practices that	Examples of Strategies and Practices that	Examples of Strategies and Practices that

<p>Support English Language Learners: *All WIDA Can Do Descriptors can be found at: https://wida.wisc.edu/teach/can-do/descriptors</p> <ul style="list-style-type: none"> • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills • with students who have more advanced English language skills • Scaffolding • Word walls • Sentence frames • Think-pair-share • Cooperative learning groups • Teacher think-aloud 	<p>Support Students with Disabilities: *Refer to students' IEP for specific modifications and accommodations</p> <ul style="list-style-type: none"> • Use of visual and multisensory formats • Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments 	<p>Support Gifted & Talented Students:</p> <ul style="list-style-type: none"> • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios
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<p>Unit 1 Connections</p>		
<p>NJSLS - Technology</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Technology Standards</u></p>	<p>Career Readiness Practices</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Career Readiness Practices</u></p>	<p>Career Ready Practices:</p> <ul style="list-style-type: none"> • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence
<p>Technology Standards: Technology standards are embedded throughout all curricular units.</p> <p>8.1 Educational Technology All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</p> <p>All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p>	<p>21st Century Skills</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p>Interdisciplinary Connections</p> <p><i>When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.</i></p>

Refer to the 21st Century Life and Skills

21st Century Themes

- Global Awareness
- Environmental Literacy
- Health Literacy
- Civic Literacy
- Financial, Economic, Business, and Entrepreneurial Literacy

21st Century Skills

- Creativity and Innovation (E)
- Critical Thinking and Problem Solving (T) (A)
- Communication (E)
- Collaboration (E) (T)

Refer to the NJ Student Learning Standards

Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.

Unit 2 Grade 4		
Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills
<ul style="list-style-type: none"> 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.] *(benchmark) 	<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"> add multi-digit whole numbers using the standard algorithm with accuracy and efficiency. subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency. <p>Learning Goal 1: Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p>
<ul style="list-style-type: none"> 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. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] 	<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"> multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values. multiply two two-digit numbers using strategies based on place value. represent these operations with equations, rectangular arrays, and area models. explain the calculation by referring to the model (equation, array, or area model). <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>
<ul style="list-style-type: none"> 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, 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>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"> 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. represent these operations with equations, rectangular arrays, and area models. explain the calculation by referring to the model (equation, array, or area model). <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>
<ul style="list-style-type: none"> 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole- 	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Proper use of the equal sign Improper use of the equal sign (e.g. $3 + 7 = 10 - 5 = 5$ is incorrect)

<p>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.4 Model with mathematics. MP.7 Look for and make use of structure.</p>	<p>Students are able to:</p> <ul style="list-style-type: none"> • solve multi-step word problems involving any of the four operations. • solve multi-step word problems involving interpretation (in context) of a remainder. • write equations to represent multi-step word problems, using a letter to represent the unknown quantity. • explain why an answer is reasonable. • use mental computation and estimation strategies to determine whether an answer is reasonable. <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>
<ul style="list-style-type: none"> • 4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. <i>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.</i> 	<p>MP.2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically.</p>	<p>Concept(s): No new concept(s) introduced Students are able to:</p> <ul style="list-style-type: none"> • solve real world and mathematical problems by finding the area of rectangles using a formula. • solve real world and mathematical problems by finding the perimeter of rectangles using a formula. <p>Learning Goal 5: Solve real world problems with whole numbers by finding the area and perimeter of rectangles using formulas.</p>
<ul style="list-style-type: none"> • 4.NF.A.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] 	<p>MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> • Equivalent fractions are the same size while the number and size of the parts differ. <p>Students are able to:</p> <ul style="list-style-type: none"> • explain, using visual fraction models, why two fractions are equivalent. • generate equivalent fractions, using fraction a/b as equivalent to fraction $(n \times a)/(n \times b)$. <p>Learning Goal 6: Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models.</p>
<ul style="list-style-type: none"> • 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 $1/2$. Recognize that comparisons are 	<p>MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> • Fractions may only be compared when the two fractions refer to the same whole. <p>Students are able to:</p> <ul style="list-style-type: none"> • create common denominators in order to compare two fractions. • create common numerators in order to compare two fractions. • compare two fractions with different numerators and different

<p>valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</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"> denominators by comparing to a benchmark fraction. record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. <p>Learning Goal 7: Compare two fractions with different numerators or different denominators, recording comparison with $>$, $=$, or $<$, and justifying the conclusion using visual fraction models.</p>
<p>4.NF.B.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</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.</p> <p>Examples: $3/8 = 1/8 + 2/8$; $2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</p> <p>[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.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"> Some fractions can be decomposed. Addition/subtraction of fractions is joining/separating parts referring to the same whole. <p>Students are able to:</p> <ul style="list-style-type: none"> decompose a fraction into a sum of fractions with the same denominator in more than one way. write decompositions of fractions as an equation. develop visual fraction models that represent decomposed fractions and use them to justify decompositions. <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 align="center">Formative Assessment</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p align="center">Summative Assessment</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>
<p>Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards.</p> <ul style="list-style-type: none"> -Exit Slips throughout each chapter based on EACH new skill taught (given BEFORE the mid-chapter checkpoint AND after; also given BEFORE Go Math Chapter Test) -Reteach/Enrich Supplemental worksheets (to help classify different abilities) -Small group direct instruction for struggling learners -One-on-one instruction (as needed) -Communicating in pairs, small group, or whole group presentations -Teacher observation -Student reflections/quick-writes on a particular lesson/skill -Homework 	<p>Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.</p> <ul style="list-style-type: none"> -Go Math Mid-Chapter Checkpoints -Chapters 6,9, and 7 (use as quiz grade) -Go Math Chapter Tests – Chapters 6,9, and 7 (use as test grade) -PARCC-style assessments, including extended constructed responses (ECR) -Projects -Benchmark Assessments -PARCC Assessment

<p align="center">Focus: Mathematical Concepts</p>
<p>Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate.</p> <p>Prerequisite skills: Understanding of fractions as numbers.</p> <p>Common Misconceptions: 4.NF.1-2 Students think that when generating equivalent fractions, they need to multiply or divide either the numerator or denominator, such as, changing $\frac{1}{2}$ to sixths. They would multiply the denominator by 3 to get $\frac{1}{6}$, instead of multiplying the numerator by 3 also.</p> <p>Their focus is only on the multiple of the denominator, not the whole fraction. It's important that students use a fraction in the form of one such as $\frac{3}{3}$ so that the numerator and denominator do not contain the original numerator or denominator.</p> <p>4.NB.3-4</p>

Students think that it does not matter which model to use when finding the sum or difference of fractions. They may represent one fraction with a rectangle and the other fraction with a circle. They need to know that the models need to represent the same whole.

4.NF.5-7

Students treat decimals as whole numbers when making comparison of two decimals. They think the longer the number, the greater the value. For example, they think that .03 is greater than 0.3.

Number Fluency (for grades K-5):

Grade

K

1

2

3

4

Required Fluencies

Add/Subtract within 5

Add/Subtract within 10

Add/ Subtract within 20

Add/Subtract within 1,000; Multiplication and Division Facts 0-10

Fluently add and subtract multi-digit whole numbers using the standard algorithm ; Multiplication and Division Facts 0-12

District/School Tasks

Exemplar tasks or illustrative models could be provided.

- iReady math practice
- Animated Go Math models
- Grab and Go activities (Go Math)
- Using technological resources and other 21st century skills to support and enhance mathematical understanding
- Using connections between pictures, oral language, written symbols, manipulative models, and real-world situations
- Classroom economy system in which students "do" math (exchanging money, balancing checkbook, etc)

District/School Primary and Supplementary Resources

District/school resources and supplementary resources that are texts as well as digital resources used to support the instruction.

- ECR resource book (grade level coordinator OR designated "math person" will house in their room)
- iReady website
- Illustrative Mathematics
<https://www.illustrativemathematics.org/>
- Supplemental websites (various operations):
http://www.mathplayground.com/grade_4_games.html
<http://www.math-play.com/4th-grade-math-games.html>
http://www.abcya.com/fourth_grade_computers.htm
- Additional Digital Resources:
 - IXL~ Increasing Pattern
<https://www.ixl.com/math/grade-4/complete-an-increasing-number-pattern>
 - * Study Jams ~ Number Patterns:
<http://studyjams.scholastic.com/studyjams/jams/math/algebra/number-patterns.htm>

- IXL ~ Given Rule to Complete Pattern: <https://www.ixl.com/math/grade-4/use-a-rule-to-complete-a-number-pattern>
- IXL ~ Input/Output Table: <https://www.ixl.com/math/grade-4/input-output-tables-with-addition-subtraction-multiplication-and-division>
- StudyJams- Prime Factorization: <http://studyjams.scholastic.com/studyjams/math/multiplication-division/prime-factorization.htm>
- IXL ~ Identify Factors: <https://www.ixl.com/math/grade-4/identify-factors>
- Study Jams ~ Prime and Composite Numbers: <http://studyjams.scholastic.com/studyjams/math/multiplication-division/prime-composite-numbers.htm>

Instructional Best Practices and Exemplars

This is a place to capture examples of standards integration and instructional best practices.

- Daily "Do Now" warm up
- Explicit teacher modeling of how to provide appropriate rationales for math work
- Turn and Talk
- Student modeling for struggling learners to learn from their peers
- Encouraging and facilitating the sharing of mathematical ideas, discussing mathematics amongst each other, and how to refine and critique each other's ideas and understandings
- Making interdisciplinary connections using reading texts
- Classroom economy system in which students "do" math (exchanging money, balancing checkbook, etc)
- Differentiated instruction based on students individual needs such as, but not limited to:
 - *Extra time for assigned tasks
 - *Timeline with due dates for projects
 - *Provide lecture notes/ outline
 - *Help students verbalize steps
 - *Repeat, clarify or reword instructions
 - *Mini breaks between tasks
 - *Visual and verbal reminders
 - *Provide immediate feedback
 - *Computer/whiteboard assistance

Unit 2 Suggested Modifications/Accommodations/Extension Activities

English Language Learners (ELL)

Special Education / 504

Gifted and Talented

<p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>
<p>Examples of Strategies and Practices that Support English Language Learners:</p> <p>*All WIDA Can Do Descriptors can be found at: https://wida.wisc.edu/teach/can-do/descriptors</p> <ul style="list-style-type: none"> • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills • Pairing students who have more advanced English language skills • Scaffolding • Word walls • Sentence frames • Think-pair-share • Cooperative learning groups • Teacher think-aloud 	<p>Examples of Strategies and Practices that Support Students with Disabilities:</p> <p>*Refer to students' IEP for specific modifications and accommodations</p> <ul style="list-style-type: none"> • Use of visual and multisensory formats • Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments 	<p>Examples of Strategies and Practices that Support Gifted & Talented Students:</p> <ul style="list-style-type: none"> • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios

<p>Unit 2 Connections</p>	
<p>NJSLS - Technology</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Technology Standards</u></p>	<p>Career Readiness Practices</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Career Readiness Practices</u></p>
<p>Technology Standards: Technology standards are embedded throughout all curricular units.</p> <p>8.1 Educational Technology All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</p> <p>All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p>	<p>Career Ready Practices:</p> <ul style="list-style-type: none"> • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.

<p>21st Century Skills <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i> Refer to the <u>21st Century Life and Skills</u></p>	<p>Interdisciplinary Connections <i>When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.</i> Refer to the <u>NJ Student Learning Standards</u></p>
<p>21st Century Themes</p> <ul style="list-style-type: none"> ● Global Awareness ● Environmental Literacy ● Health Literacy ● Civic Literacy ● Financial, Economic, Business, and Entrepreneurial Literacy <p>21st Century Skills</p> <ul style="list-style-type: none"> ● Creativity and Innovation (E) ● Critical Thinking and Problem Solving (T) (A) ● Communication (E) ● Collaboration (E) (T) 	<p>Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.</p>

Unit 3 Grade 4

Critical Knowledge & Skills

Suggested Standards for Mathematical Practice

Content Standards

<ul style="list-style-type: none"> 4.NF.B.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. 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. 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>[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.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"> Some fractions can be decomposed. Addition/subtraction of fractions is joining/separating parts referring to the same whole. <p>Students are able to:</p> <ul style="list-style-type: none"> add and subtract fractions having like denominators in order to solve real world problems. develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions. add and subtract mixed numbers with like denominators. <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>
<ul style="list-style-type: none"> 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i> 	<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"> given a data set consisting of measurements in fractions of a unit, create a line plot. using measurement information presented in line plots, add and subtract fractions with like denominators in order to solve problems. <p>Learning Goal 3: Make a line plot to display a data set in measurements in fractions of a unit ($1/2, 1/4, 1/8$) and use it to solve problems involving addition and subtraction of fractions with like denominators.</p>
<ul style="list-style-type: none"> 4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 4.NF.B.4a. Understand a fraction a/b as a multiple of $1/b$. 	<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</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Fraction Multiplication: any fraction a/b as a multiple of fraction $1/b$. Fraction Multiplication: any multiple of fraction a/b is also a multiple of fraction $1/b$. <p>Students are able to:</p>

<p>For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times (\frac{1}{4})$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.</p> <p>4.F.4.B.4b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number.</p> <p>For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times (\frac{1}{5})$, recognizing this product as $\frac{6}{5}$. (In general, $n \times (\frac{a}{b}) = (n \times a)/b$.)</p> <p>4.NF.4.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.</p> <p>For example, if each person at a party will eat $\frac{3}{8}$ 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>[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]</p>	<p>structure.</p>	<ul style="list-style-type: none"> • represent $\frac{a}{b}$ as a $n \times (\frac{1}{b})$ using a visual fraction model. • represent $n \times (\frac{a}{b})$ as $(n \times a)/b$ in a visual fraction model. • multiply a fraction by a whole number. • solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem. <p>Learning Goal 4: Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$.</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 $\frac{a}{b}$ is the product of $\frac{1}{b}$ 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>
<ul style="list-style-type: none"> • 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 $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. <p>[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8,</p>	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> • Equivalent Fractions <p>Students are able to:</p> <ul style="list-style-type: none"> • add two fractions with respective denominators of 10 and 100 using equivalent fractions. <p>Learning Goal 7: Add two fractions with respective denominators of 10 and 100 by writing each fraction with denominator 100.</p>

<p>10, 12 and 100.]</p> <ul style="list-style-type: none"> 4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i> [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] 	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Relationship between place value (decimals) and fraction <p>Students are able to:</p> <ul style="list-style-type: none"> write a decimal as a fraction that has a denominator of 10 or 100. <p>Learning Goal 8: Given decimal notation, write fractions having denominators of 10 or 100.</p>
<ul style="list-style-type: none"> 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 $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] 	<p>MP.5 Use appropriate tools strategically. 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"> represent a decimal using a model. compare two decimals to hundredths by reasoning about their size. explain that comparisons are valid only when the two decimals refer to the same whole. record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual model). <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 $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p>
<ul style="list-style-type: none"> 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>MP.4 Model with mathematics. 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"> 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. 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). construct diagrams (e.g. number line diagrams) to represent measurement quantities. <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>
<ul style="list-style-type: none"> 4.NBT.B.4. Fluently add and subtract multi-digit whole numbers 	<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>

<p>using the standard algorithm. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmark)</p>	<ul style="list-style-type: none"> • add using the standard algorithm with accuracy and efficiency. • subtract using the standard algorithm with accuracy and efficiency. <p>Learning Goal 11: Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p>
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Unit 3 Assessment Plan	
Formative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i>	Summative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i>
<ul style="list-style-type: none"> -Fraction Jeopardy Game (Interactive Smartboard Game-Math-Play.com) -Multiplying Fractions Millionaire Game (Interactive Smartboard Game-Math-Play.com) -Exit Slips throughout each chapter based on EACH new skill taught (given BEFORE the mid-chapter checkpoint AND after; also given BEFORE Go Math Chapter Test) -Reteach/Enrich Supplemental worksheets (to help classify different abilities) -Small group direct instruction for struggling learners -One-on-one instruction (as needed) -Communicating in pairs, small group, or whole group presentations -Teacher observation -Student reflections/quick-writes on a particular lesson/skill -Homework 	<ul style="list-style-type: none"> -Go Math Mid-Chapter Checkpoints -Chapters 8-9 (use as quiz grade) -Go Math Chapter Tests – Chapters 8-9 (use as test grade) -PARCC-style assessments, including extended constructed responses (ECR) -Projects/PBL Activities -Benchmark Assessments -PARCC Assessment

Focus Mathematical Concepts													
<p>Prerequisite skills: Multiplication facts (for multiplying fractions by whole numbers); division (for converting fractions into decimals); place value (for relating tenths and hundredths); addition and subtraction (computation with money/decimals)</p> <p>Common Misconceptions: It is assumed that students are fluent in multiplication facts from 3rd grade but there is always an alarming deficiency</p>													
<p>Number Fluency (for grades K-5)</p> <table border="1"> <thead> <tr> <th data-bbox="992 1060 1523 1094">Grade</th> <th data-bbox="992 1094 1523 1980">Required Fluencies</th> </tr> </thead> <tbody> <tr> <td data-bbox="992 1094 1523 1136">K</td> <td data-bbox="992 1136 1523 1178">Add/Subtract within 5</td> </tr> <tr> <td data-bbox="992 1136 1523 1178">1</td> <td data-bbox="992 1178 1523 1220">Add/Subtract within 10</td> </tr> <tr> <td data-bbox="992 1178 1523 1220">2</td> <td data-bbox="992 1220 1523 1262">Add/ Subtract within 20</td> </tr> <tr> <td data-bbox="992 1220 1523 1262">3</td> <td data-bbox="992 1262 1523 1304">Add/Subtract within 1,000; Multiplication and Division Facts 0-10</td> </tr> <tr> <td data-bbox="992 1262 1523 1304">4</td> <td data-bbox="992 1304 1523 1980">Fluently add and subtract multi-digit whole numbers using the standard algorithm ; Multiplication and Division Facts 0-12</td> </tr> </tbody> </table>	Grade	Required Fluencies	K	Add/Subtract within 5	1	Add/Subtract within 10	2	Add/ Subtract within 20	3	Add/Subtract within 1,000; Multiplication and Division Facts 0-10	4	Fluently add and subtract multi-digit whole numbers using the standard algorithm ; Multiplication and Division Facts 0-12	
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District/School Tasks

- iReady math practice
- Animated Go Math models
- Grab and Go activities (Go Math)
- Using technological resources and other 21st century skills to support and enhance mathematical understanding
- Using connections between pictures, oral language, written symbols, manipulative models, and real-world situations
- Classroom economy system in which students “do” math (exchanging money, balancing checkbook, etc)

District/School Primary and Supplementary Resources

- ECR resource book (grade level coordinator OR designated “math person” will house in their room)
- iReady website
<http://www.math-play.com/math-fractions-games.html>
- Supplemental websites (various operations):
http://www.mathplayground.com/grade_4_games.html
<http://www.math-play.com/4th-grade-math-games.html>
http://www.abcya.com/fourth_grade_computers.htm
- Additional Digital Resources:
 - IXL ~ Area models to find equivalent fractions:
<https://www.ixl.com/math/grade-4/find-equivalent-fractions-using-area-models>
 - IXL ~ Fractions on Number Line: <https://www.ixl.com/math/grade-4/graph-equivalent-fractions-on-number-lines>
 - Study Jams ~ Fractions Bars: www.mathsisfun.com/numbers/fraction-number-line.html
 - Study Jams ~ Compare Fractions:
<http://studyjams.scholastic.com/studyjams/jams/math/fractions/fractions-mixed-numbers.htm>
 - Fraction model strips and/or circles.
 - Break apart game (specifically addition and multiplication) at GregTangMath.com (subscription required).
 - Sheppard Software ~ Fruit Shoot ~ Adding Fractions:
<http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsAddition.htm>
 - IXL ~ Adding with like denominators on number line:
<https://www.ixl.com/math/grade-4/add-fractions-with-like-denominators-using-number-lines>
 - Study Jams ~ Adding and Subtracting with like denominators:
<http://studyjams.scholastic.com/studyjams/jams/math/fractions/add-sub-common-denom.htm>
 - Math Playground ~ Convert Mixed Numbers:
www.mathplayground.com/fractions_mixed.html
 - Study Jams- Add and Subtract Mixed Numbers:
<http://studyjams.scholastic.com/studyjams/jams/math/fractions/least-common-multiple.htm>
 - IXL ~ Multiply Unit Fractions by Whole Numbers:
<https://www.ixl.com/math/grade-4/multiply-unit-fractions-by-whole-numbers>
 - SplashMath ~ Multiply Fraction by Whole Number:
www.splashmath.com/multiplying-fractions-games
 - Sheppard software ~ Fractions to Decimals:
<http://www.sheppardsoftware.com/mathgames/fractions/FractionsToDecimals.htm>

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- StudyJams- Decimal and Fraction Equivalents:
<http://studyjams.scholastic.com/studyjams/jams/math/fractions/decimals-fractions-equivalents.htm>
- IXL ~ Graph and Order Fractions on Number Line:
<https://www.ixl.com/math/grade-4/graph-and-order-fractions-on-number-lines>
- IXL ~ Add fractions with denominators of 10 and 100:
<https://www.ixl.com/math/grade-4/add-fractions-with-denominators-of-10-and-100>
- Study Jams ~ Using Place Value for Decimals on number line:
<http://studyjams.scholastic.com/studyjams/jams/math/decimals-percents/place-decimal-number-line.htm>

Instructional Best Practices and Exemplars

- Daily "Do Now" warm up
- Explicit teacher modeling of how to provide appropriate rationales for math work
- Turn and Talk
- Student modeling for struggling learners to learn from their peers
- Encouraging and facilitating the sharing of mathematical ideas, discussing mathematics amongst each other, and how to refine and critique each other's ideas and understandings
- Making interdisciplinary connections using reading texts
- Classroom economy system in which students "do" math (exchanging money, balancing checkbook, etc)
- Differentiated instruction based on student's individual needs such as, but not limited to:
 - *Extra time for assigned tasks
 - *Timeline with due dates for projects
 - *Provide lecture notes/ outline
 - *Help students verbalize steps
 - *Repeat, clarify or reword instructions
 - *Mini breaks between tasks
 - *Visual and verbal reminders
 - *Provide immediate feedback
 - *Computer/whiteboard assistance

Unit 3 Suggested Modifications/Accommodations/Extension Activities		
<p>English Language Learners (ELL)</p> <p><i>When possible, provide links to specific samples/documents/ assignments/etc.</i></p>	<p>Special Education / 504</p> <p><i>When possible, provide links to specific samples/documents/ assignments/etc.</i></p>	<p>Gifted and Talented</p> <p><i>When possible, provide links to specific samples/documents/ assignments/etc.</i></p>
<p>Examples of Strategies and Practices that Support English Language Learners:</p> <p>*All WIDA Can Do Descriptors can be found at: https://wida.wisc.edu/teach/can-do/descriptors</p> <ul style="list-style-type: none"> • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension 	<p>Examples of Strategies and Practices that Support Students with Disabilities:</p> <p>*Refer to students' IEP for specific modifications and accommodations</p> <ul style="list-style-type: none"> • Use of visual and multisensory formats • Use of assisted technology • Use of prompts 	<p>Examples of Strategies and Practices that Support Gifted & Talented Students:</p> <ul style="list-style-type: none"> • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills

<ul style="list-style-type: none"> • Teacher modeling • Pairing students with beginning English language skills with students who have more advanced English language skills • Scaffolding • Word walls • Sentence frames • Think-pair-share • Cooperative learning groups • Teacher think-aloud 	<ul style="list-style-type: none"> • Modification of content and student products • Testing accommodations • Authentic assessments 	<ul style="list-style-type: none"> • Interest-based content • Student-driven instruction • Real-world problems and scenarios
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Unit 3 Connections		
<p>NJSLS - Technology</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Technology Standards</u></p>	<p>Career Readiness Practices</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Career Readiness Practices</u></p>	<p>Career Ready Practices:</p> <ul style="list-style-type: none"> • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.
<p>Technology Standards: Technology standards are embedded throughout all curricular units.</p> <p>8.1 Educational Technology All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</p> <p>All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p>	<p>21st Century Skills</p> <p><i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>21st Century Life and Skills</u></p>	<p>Interdisciplinary Connections</p> <p><i>When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Student Learning Standards</u></p>
<p>21st Century Themes</p> <ul style="list-style-type: none"> • Global Awareness • Environmental Literacy • Health Literacy • Civic Literacy • Financial, Economic, Business, and 	<p>Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.</p>	

<p>Entrepreneurial Literacy 21st Century Skills</p> <ul style="list-style-type: none"> ● Creativity and Innovation (E) ● Critical Thinking and Problem Solving (T) (A) ● Communication (E) ● Collaboration (E) (T) 	
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Unit 4 Grade 4		
Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills
<ul style="list-style-type: none"> ● 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>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"> ● draw points, lines, line segments and rays. ● draw angles (right, acute, obtuse). ● draw perpendicular and parallel lines. ● distinguish between lines, line segments, and rays. ● identify points, lines, line segment, rays, right angles, acute angles, obtuse angles, perpendicular lines and parallel lines in two-dimensional figures. <p>Learning Goal 1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures.</p>
<ul style="list-style-type: none"> ● 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>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"> ● Trapezoid is a quadrilateral with at least one pair of parallel sides. <p>Students are able to:</p> <ul style="list-style-type: none"> ● classify triangles based on the presence or absence of perpendicular lines and based on the presence or absence of angles of a particular size. ● 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. <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>
<ul style="list-style-type: none"> ● 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 	<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"> ● fold a figure along a line in order to create matching parts. ● identify lines of symmetry as a line across the figure such that the figure can be folded along the line into matching parts. ● identify figures having line symmetry.

<p>and draw lines of symmetry.</p>		<ul style="list-style-type: none"> draw lines of symmetry. <p>Learning Goal 3: Draw lines of symmetry and identify line-symmetric figures.</p>
<ul style="list-style-type: none"> 4.MD.C.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. <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 $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.</p> <p>4.MD.C.5b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p>	<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Angles are formed by two rays sharing a common endpoint and result from the rotation of one ray around the endpoint. Angle Measurement: An angle that turns through n one-degree angles is said to have an angle measure of n degrees. <p>Students are able to:</p> <ul style="list-style-type: none"> describe an angle as measured with reference to a circle with the center of the circle being the common endpoint of the rays. explain a 'one-degree angle' and its relation to a circle; a "degree" is defined as $\frac{1}{360}$ (one-degree angle) of the entire circle. <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>
<ul style="list-style-type: none"> 4.MD.C.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. 	<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"> measure angles in whole-number degrees. given an angle measure, sketch the angle. <p>Learning Goal 5: Measure angles in whole number degrees using a protractor and sketch angles of specific measures.</p>
<ul style="list-style-type: none"> 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>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"> 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. <p>Students are able to:</p> <ul style="list-style-type: none"> add and subtract to find unknown angles on a diagram in real world and mathematical problems. write an equation with a symbol for the unknown angle measure. <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>
<ul style="list-style-type: none"> 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole- 	<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"> Proper use of the equal sign. Improper use of the equal sign (e.g. $3 + 7 = 10 - 5 = 5$ is

<p>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. *(benchmark)</p>	<p>quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure.</p>	<p>incorrect). Students are able to:</p> <ul style="list-style-type: none"> • solve multi-step word problems involving any of the four operations. • solve multi-step word problems involving interpretation (in context) of a remainder. • write equations to represent multi-step word problems, using a letter to represent the unknown quantity. • explain why an answer is reasonable. • use mental computation and estimation strategies to determine whether an answer is reasonable. <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>
<ul style="list-style-type: none"> • 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.] *(benchmark) 	<p>MP.7 Look for and make use of structure.</p>	<p>Concept(s): No new concept(s) introduced Students are able to:</p> <ul style="list-style-type: none"> • add using the standard algorithm with accuracy and efficiency • subtract using the standard algorithm with accuracy and efficiency <p>Learning Goal 8: Fluently add and subtract multi-digit whole numbers using the standard algorithm</p>

Unit 4 Assessment Plan	
<p>Formative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>	<p>Summative Assessment <i>When possible, provide links to specific samples/ documents/ assignments/etc.</i></p>
<ul style="list-style-type: none"> -Exit Slips throughout each chapter based on EACH new skill taught (given BEFORE the mid-chapter checkpoint AND after; also given BEFORE Go Math Chapter Test) -Reteach/Enrich Supplemental worksheets (to help classify different abilities) -Small group direct instruction for struggling learners -One-on-one instruction (as needed) -Communicating in pairs, small group, or whole group presentations -Teacher observation -Student reflections/quick-writes on a particular lesson/skill -Homework 	<ul style="list-style-type: none"> -Go Math Mid-Chapter Checkpoints -Chapters 8-9 (use as quiz grade) -Go Math Chapter Tests – Chapters 8-9 (use as test grade) -PARCC-style assessments, including extended constructed responses (ECR) -Projects/PBL Activities -Benchmark Assessments -PARCC Assessment

Focus Mathematical Concepts

Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate.
 Prerequisite skills:

Common Misconceptions: Students have a basic understanding of geometry, measurement and data.

Number Fluency (for grades K-5):

<u>Grade</u>	<u>Required Fluencies</u>
K	Add/Subtract within 5
1	Add/Subtract within 10
2	Add/ Subtract within 20
3	Add/Subtract within 1,000; Multiplication and Division Facts 0-10
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<http://www.math-play.com/4th-grade-math-games.html>
http://www.abcya.com/fourth_grade_computers.htm
- Additional Digital Resources
 - Resource on conversion tables for various units of measurement: <http://www.aaamath.com/grade4.html#topic167>
 - IXL ~ Add and Subtract units of Time: <https://www.ixl.com/math/grade-4/add-and-subtract-mixed-time-units>
 - IXL ~ Making Change: <https://www.ixl.com/math/grade-4/find-the-change-price-or-amount-paid>
 - Study Jams ~ Customary Units of Length: <http://studyjams.scholastic.com/studyjams/jams/math/measurement/units-of->

[measurement.htm](#)

- Quia.com ~ Conversion Charts: <https://www.quia.com/rr/337985.html>
- IXL ~ Compare and Convert Metric Units of Length: <https://www.ixl.com/math/grade-4/compare-and-convert-metric-units>
- Math Playground ~ Area and Perimeter: www.mathplayground.com/howto_samereadiffperimeter.html
- Study Jams ~ Interpret Line Plots: <http://studyjams.scholastic.com/studyjams/jams/math/data-analysis/line-plots.htm>
- IXL ~ Create Line Plots: <https://www.ixl.com/math/grade-4/create-line-plots>
- IXL ~ Interpret line plots: <https://www.ixl.com/math/grade-4/interpret-line-plots>
- Interactive Angle Maker: www.mathsisfun.com/angles.html
- Manipulate quadrilaterals and become familiar with them from various perspectives: <http://www.mathsisfun.com/quadrilaterals.html>
- MATHO: Identify geometric shapes by matching the shape with its definition: <http://www.aplusmath.com/cgi-bin/games/geomatho>
- Polygon Sort: Sort two-dimensional shapes by characteristics & Reflective Symmetry Sort: <http://www.crickweb.co.uk/ks2/numeracy-shape-and-weight.htm#quad>
- Symmetry in the Real World: <http://www.mathsisfun.com/geometry/symmetry.html>

Instructional Best Practices and Exemplars

- Daily "Do Now" warm up
- Explicit teacher modeling of how to provide appropriate rationales for math work
- Turn and Talk
- Student modeling for struggling learners to learn from their peers
- Encouraging and facilitating the sharing of mathematical ideas, discussing mathematics amongst each other, and how to refine and critique each other's ideas and understandings
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Unit 4 Suggested Modifications/Accommodations/Extension Activities		
English Language Learners (ELL) <i>When possible, provide links to specific samples/documents/ assignments/etc.</i>	Special Education / 504 <i>When possible, provide links to specific samples/documents/ assignments/etc.</i>	Gifted and Talented <i>When possible, provide links to specific samples/documents/ assignments/etc.</i>
<p>Examples of Strategies and Practices that Support English Language Learners:</p> <p>*All WIDA Can Do Descriptors can be found at: https://wida.wisc.edu/teach/can-do/descriptors</p> <ul style="list-style-type: none"> • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills <p>with students who have more advanced English language skills</p> <ul style="list-style-type: none"> • Scaffolding • Word walls • Sentence frames • Think-pair-share • Cooperative learning groups • Teacher think-aloud 	<p>Examples of Strategies and Practices that Support Students with Disabilities:</p> <p>*Refer to students' IEP for specific modifications and accommodations</p> <ul style="list-style-type: none"> • Use of visual and multisensory formats • Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments 	<p>Examples of Strategies and Practices that Support Gifted & Talented Students:</p> <ul style="list-style-type: none"> • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios

Unit 4 Connections	
<p>NJSLS - Technology</p> <p><i>When possible, provide links to specific samples/documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Technology Standards</u></p>	<p>Career Readiness Practices</p> <p><i>When possible, provide links to specific samples/documents/ assignments/etc.</i></p> <p>Refer to the <u>NJ Career Readiness Practices</u></p>
Technology Standards: Technology standards are embedded	Career Ready Practices:

throughout all curricular units.
8.1 Educational Technology All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
8.2 Technology Education, Engineering, Design and Computational Thinking - Programming
 All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

- CRP1: Act as a responsible and contributing citizen and employee.
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- CRP9: Model integrity, ethical leadership and effective management.
- CRP10: Plan education and career paths aligned to personal goals.
- CRP11: Use technology to enhance productivity.
- CRP12: Work productively in teams while using global competence.

21st Century Skills
When possible, provide links to specific samples/ documents/ assignments/etc.
 Refer to the 21st Century Life and Skills

Interdisciplinary Connections
When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.
 Refer to the NJ Student Learning Standards

- 21st Century Themes**
- Global Awareness
 - Environmental Literacy
 - Health Literacy
 - Civic Literacy
 - Financial, Economic, Business, and Entrepreneurial Literacy
- 21st Century Skills**
- Creativity and Innovation (E)
 - Critical Thinking and Problem Solving (T) (A)
 - Communication (E)
 - Collaboration (E) (T)

Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.