



Grade 4 Math Curriculum

Grade 4 Math Curriculum



Overview and Philosophy

Overview





This curriculum is aligned to the Common Core State Standards for Mathematics. The curriculum document has activities and assessments are listed that are specific to those standards. Extensions, technology and other support materials, and ideas for the differentiation of math instruction can be found in the grade level instructional manuals.

District Philosophy

Every student will receive high quality instruction and be part of a community of learners who are encouraged to think critically and flexibly and communicate their reasoning with others. The mission of Ledyard Public Schools is to ensure a culture of excellence that maximizes student achievement, develops skills for lifelong learning, and prepares students to be productive and responsible citizens in a global society.

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Standards for Mathematical Practice

<div data-bbox="142 315 277 959"> <p>1. Make sense of problems and persevere in solving them</p> <p>6. Attend to precision</p> </div> <div data-bbox="315 315 772 506"> <p>2. Reason abstractly and quantitatively</p> <p>3. Construct viable arguments and critique the reasoning of others</p> </div> <div data-bbox="315 561 772 714"> <p>4. Model with mathematics</p> <p>5. Use appropriate tools strategically</p> </div> <div data-bbox="315 769 772 961"> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p> </div> <div data-bbox="163 1073 821 1349"> <p> Reasoning and explaining</p> <p> Modeling and using tools</p> <p> Seeing structure and generalizing</p> <p> Overarching habits of mind of a productive mathematical thinker.</p> </div>	<div data-bbox="1186 289 1667 321"> <h3><u>Standards for Mathematical Practice</u></h3> </div> <p>The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. The Mathematical Practices should be used when planning lessons.</p> <p>Students who <u>make sense of problems and persevere in solving them</u> discuss, explain and demonstrate solving a problem with multiple representations in multiple ways.</p> <p>Students who <u>reason abstractly and quantitatively</u> can understand quantities and their relationships, convert situations into symbols in order to solve a problem and explain solutions within a relevant real-world/meaningful situation</p> <p>Students who <u>construct viable arguments & critique the reasoning of others</u> analyze, explain and justify their reasoning as well as the reasoning of others using appropriate math language and vocabulary.</p> <p>Students who <u>model with mathematics</u> use models, symbolic representations, and technology as tools to appropriately represent a problem or situation within the context of the problem.</p> <p>Students who <u>use appropriate tools strategically</u> explain and model their mathematical thinking as well as use estimation strategies effectively in various situations.</p> <p>Students who <u>attend to precision</u> consistently use appropriate symbols and vocabulary to communicate their mathematical thinking.</p> <p>Students who look for and <u>make sense of structure</u> identify the structure of mathematics using relationships such as part to whole and whole to parts to identify solution paths.</p> <p>Students who <u>look for and express regularity in repeated reasoning</u> recognize the patterns and/or relationships and extend these to make a mathematical generalization or rule.</p>
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Grade 4 Domains, Clusters and Critical Areas of Focus

Domains	Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations: Fractions	Measurement & Data	Geometry
Clusters	<p>Use the four operations with whole numbers to solve problems.</p> <p>Gain familiarity with factors and multiples.</p> <p>Generate and analyze patterns.</p>	<p>Generalize place value understanding for multi-digit whole numbers.</p> <p>Use place value understanding and properties of operations to perform multi-digit arithmetic.</p>	<p>Extend understanding of fraction equivalence and ordering.</p> <p>Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.</p> <p>Understand decimal notations for fractions., and compare decimal fractions.</p>	<p>Solve problems involving measurement and conversion of measurement from a larger unit to a smaller unit.</p> <p>Represent and interpret data.</p> <p>Geometric measurement: understand concepts of angle and measure angles.</p>	<p>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</p>

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In Grade 4, instructional time should focus on three critical areas:

1. Developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends

- Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.

2. Developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, multiplication of fractions by whole numbers

- Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., $15/9 = 5/3$), and they develop methods for generating and recognizing equivalent fractions. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.

3. Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry

- Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

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<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex-grow: 1; text-align: center;"> UNIT 1: Multiplicative Thinking </div> <div style="text-align: right;"> Pacing: 20 +2 days </div> </div>	
Description	This unit focuses on using the study of multiplication and division, focusing particularly on models, strategies, and multiplicative comparisons.
Essential Questions	<ul style="list-style-type: none"> What is a mathematical community? What is the relationship between factors and products? How do we know if a number is prime or composite? How do models help us determine and show the products and quotients? What patterns do I notice when I am multiplying whole numbers that can help me multiply more efficiently? Why are units important in measurement? Why do we need to be able to compare relative sizes of measurement?
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Models for Multiplication & Division</p> <p><input type="checkbox"/> <i>Module 1 sets the tone for the year and establishes what a math community looks and sounds like. Students review and extend their understanding of multiplication strategies, concepts, and models including open number lines, ratio tables, and arrays.</i></p> <p>Module 2: Primes & Composites (Work Places: 1A Cover Up, 1B Arrays to One Hundred, 1C The Multiple Wheel, 1D Spinning Around Multiplication)</p> <p><input type="checkbox"/> <i>Students use tile arrays to investigate factors of numbers and determine whether numbers are prime and/or composite. They consider multiplication fact strategies introduced in third grade and use open number lines, ratio tables, and the area model to review them.</i></p> <p>Module 3: Multiplicative Comparisons & Equations (Work Place 1E Products Four in a Row, 1F Dragon’s Gold)</p> <p><input type="checkbox"/> <i>This module focuses on factors, products, multiplication comparisons, and equations, and introduces students to two new Work Place games. In Session 4, students spend time engaged in Work Places, giving the teacher another opportunity to differentiate instruction.</i></p>

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	<p>Module 4: Measurement Experiences</p> <p><input type="checkbox"/> <i>This module provides hands-on experience with measurement as students explore linear measurement, mass, weight and liquid volume, and review the definitions and units of measure in for each category.</i></p>
Vocabulary	<p><u>Unit One Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>area, area model of multiplication, array, associative property of multiplication, centimeter (cm), dimension, divide, dividend, divisor, equation, estimate, factor, gram (g), half kilogram (kg), kilometer (km,) liter (l), meter (m), milliliter (ml), multiple, multiply, pattern, product, quotient, ratio table, rectangle, remainder, unit</i></p> <p><u>Additional Unit One Vocabulary</u></p> <p>area, model, coin, decimeter, dime, division, double/doubling, estimation, grouping, hundred thousands, hundreds, landmark number, less, mat mat-mat, more, multiplication, nickel, ones, partial products, penny, place, value, quarter, relationship, sharing, skip-counting, square, centimeters, strategies, strip, strip-mat, ten thousands, tens, thousands, unknown</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Interpret products of whole numbers. • Solve multiplication story problems with products to 100 involving situations of equal groups. • Solve for the unknown in a multiplication equation involving 3 whole numbers. • Multiply using the commutative and distributive properties. • Fluently multiply with products to 100 using strategies. • Demonstrate that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths. • Represent the product of two numbers as the area of a rectangle with side lengths equal to those two numbers. • Use the area model for multiplication to illustrate the distributive property. • Find the area of a figure that can be decomposed into non-overlapping rectangles. <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> • Write a multiplication equation to represent a verbal statement of a multiplicative comparison. • Solve story problems involving a multiplicative comparison using multiplication or division.

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	<ul style="list-style-type: none"> • Find all factor pairs for a whole number between 1 and 100. • Demonstrate an understanding that a whole number is a multiple of each of its factors. • Determine whether a whole number between 1 and 100 is prime or composite. • Identify the relative sizes of centimeters, meters, and kilometers; grams and kilograms; ounces and pounds; milliliters and liters; seconds, minutes and hours • Express a measurement in a larger unit in terms of a smaller unit within the same system of measurement. <p><u>Math Strategies & Models Used:</u></p> <p>Multiplication Strategies; Multiplication Strategy posters</p> <p>Skip-Counting</p> <p>Doubling</p> <p>Doubling/Halving</p> <p>Partial Products</p> <p>Open Number Line</p> <p>Array or Area Model (Closed Array, Linear Pieces and Base Ten Area Pieces, Open Array)</p> <p>Ratio Table</p> <p><u>Number Corner:</u></p> <p>September Number Corner reviews third grade skills and concepts as they begin moving to fourth grade content. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will focus on multiplication: students review multiplication facts, work with multiples of 10, think about factors and multiples, and work on strategies for multiplication with larger numbers.</p> <p>October Number Corner will focus on key fourth grade skills and concepts including analyzing patterns, measurement and fractions, work with numbers in base ten, multi-digit multiplication, and multi-step story problems.</p>
<p>Technology Enhancements</p>	<p>MLC Apps</p> <p>Family Unit 1 Overview</p> <p>Family Unit 1 Overview, Spanish</p> <p>Math At Home</p>

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Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> • 1A Cover Up • 1B Arrays to One Hundred • 1C The Multiple Wheel • 1D Spinning Around Multiplication • 1E Products Four in a Row • 1F Dragon's Gold <p>Unit Assessments:</p> <ul style="list-style-type: none"> • Checkpoints • (Screener) Pre Assessment/Post Assessment <ul style="list-style-type: none"> ◦ Pre/Post Assessment Reflection & Goal Setting • CGA (Comprehensive Growth Assessment, Fall) <p>SBAC Preparation</p> <p>Interim Assessment</p> <ul style="list-style-type: none"> ◦ Multiplication & Division <p>IAB Opportunity Students will engage in an 11 question digital experience practicing using tools to demonstrate understanding of prime and composite number, factors and multiples, and comparing common factors of two numbers with table and multiple choice questions</p> <ul style="list-style-type: none"> • OA • NBT 	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 1 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 1 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<p>Relevant Standards: (Bold Priority Standards) 3.OA.1, 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.7, 3.MD.7a, 3.MD.7b, 3.MD.7c, 3.MD.7d, 4.OA.1, 4.OA.2, 4.OA.4, 4.MD.1</p> <p>Standards of Mathematical Practice: 4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>

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UNIT 2: Multi-Digit Multiplication & Early Division		Pacing: 20 +2 days
Description	This unit builds on multiplicative reasoning through multi-digit multiplication and early division.	
Essential Questions	<ul style="list-style-type: none"> • How can we explain our thinking and model our strategies? • What happens when a number is multiplied by 10, 100, or 1,000? • What is the connection between multiplication and area? • What are the best strategies for solving multiplication with larger numbers? • How can we use our strategies to independently solve multi-step story problems? • How can we use multiplication concepts to solve division problems? • How do we interpret remainders? 	
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Building Multiplication Arrays (Work Place 2A What's Missing? Bingo)</p> <p><input type="checkbox"/> <i>Module 1 introduces multi-digit multiplication by engaging students in a deeper understanding of place value and the properties of multiplication. From there, students use base ten area pieces to model and solve 1- by 2-digit multiplication combinations, which also reinforces the connection between multiplication and area.</i></p> <p>Module 2: Arrays & Ratio Tables (Work Place 2B Division Capture)</p> <p><input type="checkbox"/> <i>This module focuses on multiplication arrays and moving students toward increasingly efficient strategies for solving multiplication problems. Students then move toward building ratio tables and sketching arrays on grid paper and open arrays, which are key skills for working larger numbers.</i></p> <p>Module 3: Multiplication Stories & Strategies (Work Place 2C Moolah on my Mind)</p> <p><input type="checkbox"/> <i>This module focuses on independent problems solving through story problems and mathematical discussions. Students then investigate the effects of doubling and halving factors, and practice multiplying in real world contexts using money and measurement.</i></p>	

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	<p>Module 4: Early Division with Remainders (Work Place 2D Remainders Win, Work Place 2E, More or Less Multiplication)</p> <p><input type="checkbox"/> <i>This module focuses on solving division problems with remainders through models and story problems. Students practice interpreting reminders based on context. Students also learn to apply concepts of multiplication to division by solving for the unknown dividend.</i></p>
Vocabulary	<p><u>Unit Two Vocabulary</u></p> <p><i>Bold Italicized</i> identifies those terms for which Resource Cards are available.</p> <p><i>area, area model of multiplication, array, associative property of multiplication, centimeter (cm), dimension, divide, dividend, divisor, equation, estimate, factor, gram (g), half kilogram (kg), kilometer (km,) liter (l), meter (m), milliliter (ml), multiple, multiply, pattern, product, quotient, ratio table, rectangle, remainder, unit</i></p> <p><u>Additional Unit Two Vocabulary</u></p> <p>area, model, coin, decimeter, dime, division, double/doubling, estimation, grouping, hundred thousands, hundreds, landmark number, less, mat mat-mat, more, multiplication, nickel, ones, partial products, penny, place, value, quarter, relationship, sharing, skip-counting, square, centimeters, strategies, strip, strip-mat, ten thousands, tens, thousands, unknown</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Interpret products of whole numbers. • Solve multiplication story problems with products to 100 involving situations of equal groups. • Solve for the unknown in a multiplication equation involving 3 whole numbers. • Multiply using the commutative and distributive properties. • Fluently multiply with products to 100 using strategies. • Demonstrate that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths. • Represent the product of two numbers as the area of a rectangle with side lengths equal to those two numbers. • Use the area model for multiplication to illustrate the distributive property. • Find the area of a figure that can be decomposed into non-overlapping rectangles. <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> • Write a multiplication equation to represent a verbal statement of a multiplicative comparison. • Solve story problems involving a multiplicative comparison using multiplication or division. • Find all factor pairs for a whole number between 1 and 100. • Demonstrate an understanding that a whole number is a multiple of each of its factors.

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	<ul style="list-style-type: none"> ● Determine whether a whole number between 1 and 100 is prime or composite. ● Identify the relative sizes of centimeters, meters, and kilometers; grams and kilograms; ounces and pounds; milliliters and liters; seconds, minutes and hours ● Express a measurement in a larger unit in terms of a smaller unit within the same system of measurement. <p><u>Math Strategies & Models Used:</u></p> <p>Doubling/Halving Ratio Table Array or Area Model (Closed Array, Linear Pieces and Base Ten Area Pieces, Open Array) Multiplication Strategies; Multiplication Strategy posters; Skip Counting Partial Products</p> <p><u>Number Corner:</u></p> <p>October Number Corner will focus on key fourth grade skills and concepts including analyzing patterns, measurement and fractions, work with numbers in base ten, multi-digit multiplication, and multi-step story problems.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 2 Overview</p> <p>Family Unit 2 Overview, Spanish</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 2A Work Place ● 2B Division Capture ● 2C Moolah on My Mind ● 2D Remainders Win ● 2E More or Less Multiplication <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Checkpoints <ul style="list-style-type: none"> ○ Multiplication ○ Multiplying by Tens

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	<ul style="list-style-type: none"> • Work Sample <ul style="list-style-type: none"> ◦ Multiplication Strategies • (Screener) Pre Assessment/Post Assessment* <ul style="list-style-type: none"> ◦ Pre/Post Assessment Reflection & Goal Setting <p>SBAC Preparation</p> <p>Interim Assessment</p> <p>IAB Opportunity Students will engage in an 11 question digital experience practicing using tools to demonstrate understanding of prime and composite number, factors and multiples, and comparing common factors of two numbers with table and multiple choice questions</p> <ul style="list-style-type: none"> • OA • NBT 	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 2 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 1 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<p>Relevant Standards: (Bold Priority Standards)</p> <p>3.OA.4, 3.OA.5, 3.OA.7, 4.MD.2, 4.MD.3, 4.OA.1, 4.OA.2, 4.OA.3, 4.OA.4, 4.NBT.1, 4.NBT.5, 4.NBT.6, 4.MD.2, 4.MD.3</p> <p>Standards of Mathematical Practice:</p> <p>4.MP.1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>

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<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex-grow: 1; text-align: center;"> UNIT 3: Fractions & Decimals </div> <div style="text-align: right;"> Pacing: 20 +2 days </div> </div>	
Description	Students use a variety of tools, including folded paper strips, egg cartons, geoboards, number lines, and base ten pieces, to model, read, write, compare, order, compose, and decompose fractions and decimals.
Essential Questions	<ul style="list-style-type: none"> What is a fraction? Why is it important to identify, represent, and compare fractions as equal parts of a whole or a set of wholes? How do we identify, represent, and compare equivalent fractions with unlike denominators? What is the relationship between fractions and decimals?
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Equivalent Fractions</p> <p><input type="checkbox"/> <i>Students review fraction skills and concepts from the previous grade and extend their understanding to mixed numbers, improper fractions, and more sophisticated strategies for generating equivalent fractions.</i></p> <p>Module 2: Comparing, Composing & Decomposing Fractions & Mixed Numbers (Work Places 3A Dozens of Eggs, 3B Racing Fractions)</p> <p><input type="checkbox"/> <i>In this module, the geoboard is assigned a value of 1. Students name fractional parts of the geoboard and describe the parts' relationship to one another. Their observations are then extended into comparing fractions with unlike numerators and denominators, and adding fractions with like denominators. The last three sessions in the module feature an extended problem solving opportunity followed by a math forum, as well as two new Work Places that provide practice with composing and decomposing fractions.</i></p> <p>Module 3: Introducing Decimals (Work Places 3C Decimal Four Spins to Win, 3D Decimal More or Less)</p> <p><input type="checkbox"/> <i>In this module, the base ten mat is assigned a value of 1. Students determine that the strip and unit are worth $\frac{1}{10}$ and $\frac{1}{100}$ respectively, and are introduced to the decimal notation for these fractions. These base ten pieces serve as a visual anchor as students compare decimal numbers and investigate the relationship between tenths and hundredths.</i></p> <p>Module 4: Fractions & Decimals (Work Place 3E Fractions & Decimals)</p> <p><input type="checkbox"/> <i>In this module, the relationship between decimals and fractions with denominators 10 and 100 are reinforced. Students also investigate the connection between decimals and other common fractions, including halves, fourths, fifths, and twentieths.</i></p>

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<p style="text-align: center;">Vocabulary</p>	<p><u>Unit Three Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>area, decimal, denominator, difference, divide, equal, equation, equivalent fraction, fraction, hundredth, improper fraction, mixed number, numerator, pattern, product, quotient, ratio, table, sum or total, tenth, unit</i></p> <p><u>Additional Unit Three Vocabulary</u></p> <p>compare, comparison, convert, decimal number, decimal point, division, eighths, equal parts, equivalent, fifth, fourths, greater than, halves, less than, region, relationship, share/shares, sixteenth, sixths, thirds, twelfths, value, whole</p>
<p style="text-align: center;">Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> ● Using a visual model to explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$ ● Using visual models to generate and recognize equivalent fractions ● Comparing two fractions with different numerators and different denominators, use the symbols $>$, $=$, and $<$ to show those comparisons, and explain why one fraction must be greater than or less than another ● Explaining addition of fractions as joining parts referring to the same whole ● Adding and subtracting fractions and mixed numbers with like denominators ● Solving story problems addition and subtractions of fractions referring to the same whole and with like denominators ● Writing fractions with denominators 10 and 100 in decimal notation <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> ● Demonstrate an understanding that a fraction $\frac{a}{b}$ is a multiple of the unit fraction $\frac{1}{b}$; write an equation showing that a fraction $\frac{a}{b}$ is the product of $a \times \frac{1}{b}$ ● Multiply a fraction by a whole number; demonstrate a understanding that any multiple of $\frac{a}{b}$ is also a multiple of the unit fraction $\frac{1}{b}$ ● Express a fraction with denominator 10 as an equivalent fraction with denominator 100 <p><u>Math Strategies & Models Used:</u></p>

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	<p>Reasoning proportionally</p> <p>Changing the Number of divisions on the egg-carton model, the geoboard & base ten mat</p> <p>Folded paper strips</p> <p>Egg carton fractions</p> <p>Geoboard fractions</p> <p>Open Number Line; Number Line App</p> <p>Base Ten Area Pieces; Number Pieces App</p> <p><u>Number Corner:</u></p> <p><u>November Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will allow students to play games, engage in discussions, and practice skills related to measuring, calculating with time, making conversions, identifying patterns, multiples and factors, ordering and comparing numbers, adding multi-digit numbers, and making multiplicative comparisons.</p> <p><u>December Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will allow students to work with geometry as they explore, discuss, analyze congruence, line symmetry, and parallel and perpendicular lines in figures. Students will also focus on numbers and operations in base ten, especially adding and subtracting 2-, 3-, and 4-digit numbers. Students finish adding multiples of whole numbers on the number line.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 3 Overview</p> <p>Family Unit 3 Overview, Spanish</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 3A Dozens of Eggs ● 3B Racing Fractions ● 3C Four Spins to Win ● 3D Decimal More or Less ● 3E Fractions & Decimals

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	<p>Unit Assessments:</p> <ul style="list-style-type: none">• Checkpoints<ul style="list-style-type: none">o Equivalent Fractionso Fraction & Decimal• (Screener) Pre Assessment/ Post Assessment*<ul style="list-style-type: none">o Pre/Post Assessment Reflection & Goal Setting <p>SBAC Preparation</p> <p>Interim Assessment</p> <p>IAB Opportunity Fraction Equivalence and Ordering (FIAB); Build Fractions from Unit Fractions (FIAB), Fractions and Decimal Notation (FIAB), Number and Operations- Fractions</p> <ul style="list-style-type: none">• OA• NBT		
Alignments	<table><tr><td>Textbook</td><td>Bridges in Mathematics Teachers Guide, Unit 3 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 1 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</td></tr></table>	Textbook	Bridges in Mathematics Teachers Guide, Unit 3 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 1 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
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<table><tr><td>CCS</td><td><p>Relevant Standards: (Bold Priority Standards)</p><p>4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3b, 4.NF.3c, 4.NF.3d, 4.NF.4a, 4.NF.4b, 4.NF.5, 4.NF.6, 4.NF.7</p><p>Standards of Mathematical Practice:</p><p>4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p></td></tr></table>	CCS	<p>Relevant Standards: (Bold Priority Standards)</p> <p>4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3b, 4.NF.3c, 4.NF.3d, 4.NF.4a, 4.NF.4b, 4.NF.5, 4.NF.6, 4.NF.7</p> <p>Standards of Mathematical Practice:</p> <p>4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>	
CCS	<p>Relevant Standards: (Bold Priority Standards)</p> <p>4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3b, 4.NF.3c, 4.NF.3d, 4.NF.4a, 4.NF.4b, 4.NF.5, 4.NF.6, 4.NF.7</p> <p>Standards of Mathematical Practice:</p> <p>4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>		

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<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex-grow: 1; text-align: center;"> UNIT 4: Addition, Subtraction & Measurement </div> <div style="text-align: right;"> Pacing: 20 +2 days </div> </div>	
Description	<p>In this unit, students study addition, subtraction, and measurement concepts. Students investigate and use standard addition and subtraction algorithms, and make generalizations about which work best for certain problems. Students also investigate relationships and conversions between common measures, such as length and distance, liquid volume, time, mass, and weight.</p>
Essential Questions	<ul style="list-style-type: none"> How does place value understanding help us solve addition and subtraction problems? Why are strategies important for solving multi-digit addition and subtraction? How do our strategies for multi-digit computation help us solve measurement problems? How do we explain what happens in story problems? What does it mean to model in mathematics?
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Place Value & the Standard Addition Algorithm (Work Place 4A Target One Thousand, Work Place 4B Add, Round & Compare)</p> <p><input type="checkbox"/> <i>This module focuses on understanding place value to 1,000,000 and leveraging this understanding to develop efficient and fluent strategies for multi-digit addition with increasingly larger numbers.</i></p> <p>Module 2: The Standard Subtraction Algorithm (Work Places 4C Roll & Subtract One Thousand)</p> <p><input type="checkbox"/> <i>This module uses problem strings to understand subtraction strategies such as constant difference, difference vs. removal, and standard algorithm.</i></p> <p>Module 3: Measurement (Work Place 4D Target Five)</p> <p><input type="checkbox"/> <i>The module gives students an opportunity to explore benchmarks and relative sizes for length, time, liquid, volume, mass, and weight. Students apply some of the place value and multi-digit computation skills to solve problems.</i></p> <p>Module 4: Module 4 Measurement & Data Displays</p>

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	<input type="checkbox"/> <i>This module applies what students know about measuring skills to data analysis.</i>
Vocabulary	<p>Unit Four Vocabulary <i>Bold Italicized</i> identifies those terms for which Resource Cards are available.</p> <p><i>algorithm, bar graph, centimeter (cm), cup, customary system, difference, elapsed time, expanded form, foot (ft.), gallon (gal.), gram (g), inch (in.), kilogram (kg), kilometer (km), line plot, liter (l), mass, maximum, median, meter (m), metric system, mile (mi.), milliliter (ml), millimeter (mm), minimum, mode, ounce (oz.), pint (pt.), pound (lb.), quart (qt.), range, rounding, scale, sum or total, table, volume</i></p> <p><u>Additional Unit Four Vocabulary</u></p> <p>addend, benchmark, borrow, capacity, constant difference, conversion, decade, differencing, digit, give and take, graph, hour (hr.), hundred, thousand, liquid, million, minuend, minute (min.), regroup, regrouping, removal, remove, second (sec.), subtraction, subtrahend, ten thousand, weight</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Demonstrate an understanding that in a multi-digit number, each digit represents ten times what it represents in the place to its right. • Read and write multi-digit whole numbers represented with base-ten numerals, number names, and expanded form; compare pairs of multi-digit numbers; use $>$, $=$, and $<$ symbols to record comparisons. • Round multi-digit whole numbers to the nearest hundred, thousand, and ten thousand. • Fluently add and subtract multi-digit whole numbers, using an algorithm or another strategy. • Use the standard algorithm with fluency to add and subtract multi-digit whole numbers. • Identify the relative sizes of centimeters, meters, and kilometers; grams and kilograms; ounces and pounds; milliliters and liters; seconds, minutes and hours. • Express a measurement in a larger unit in terms of a smaller unit within the same system of measurement. • Record equivalent measurements in different units from the same system of measurement using a 2-column table. <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> • Solve multi-step story problems involving only whole numbers using addition, subtraction, multiplication, and division. • Solve story problems involving distance, time, liquid volume and mass using addition, subtraction, multiplication, and division of whole numbers.

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	<ul style="list-style-type: none"> Solve story problems that involve expressing measurements given in a larger unit in terms of a smaller unit within the same system of measurement; use diagrams to represent measurement quantities. <p><u>Math Strategies & Models Used:</u></p> <p>Base Ten Area Pieces, Multiplicative Strategies Posters Open Number lines Number line app Give & Take Addition Constant Difference for Subtraction</p> <p><u>Number Corner:</u></p> <p><u>December Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will allow students to work with geometry as they explore, discuss, analyze congruence, line symmetry, and parallel and perpendicular lines in figures. Students will also focus on numbers and operations in base ten, especially adding and subtracting 2-, 3-, and 4-digit numbers. Students finish adding multiples of whole numbers on the number line.</p> <p><u>January Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings have a primary focus on division; students learn and practice division strategies and consider division situations and contexts. Students explore geometry shapes and scaling as well as work with fractions.</p>
Technology Enhancements	MLC Apps Family Unit 4 Overview Family Unit 4 Overview (Spanish) Math At Home
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> 4A Target One Thousand 4B Add, Round & Compare 4C Roll & Subtract One Thousand 4D Target 5

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	<p>Unit Assessments:</p> <ul style="list-style-type: none"> • Unit 4 Checkpoints <ul style="list-style-type: none"> o Subtraction o Place Value • Work Samples <ul style="list-style-type: none"> o Addition Strategies o Subtraction Strategies • Unit 4 (Screener) Pre Assessment/ Post Assessment* <ul style="list-style-type: none"> o Pre/Post Assessment Reflection & Goal Setting • CGA (Comprehensive Growth Assessment, Winter) <p>Interim Assessment</p> <ul style="list-style-type: none"> • OA • NBT • NF • MD
Alignments	<p style="text-align: center;">Textbook</p> <p>Bridges in Mathematics Teachers Guide, Unit 4 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 2 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>
	<p style="text-align: center;">CCS</p> <p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>4.OA, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2</p> <p><u>Standards of Mathematical Practice:</u></p> <p>4.MP.1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>

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UNIT 5: Geometry & Measurement		Pacing: 20 +2 days
Description	In this unit, students study the geometric concepts of angles, angle measure, parallel lines, perpendicular lines, and reflective symmetry.	
Essential Questions	<ul style="list-style-type: none"> • What is an angle? • How do we measure an angle using a protractor? • What are we measuring when we measure an angle? • How can angles be combined to create other angles? • What are benchmark angles and how can they be useful in estimating angle measures? • How are area and perimeter related? How are they different? 	
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Measuring Angles (Work Place 5A)</p> <p><input type="checkbox"/> <i>Students use protractors and pattern blocks as tools while they work with angles and two-dimensional figures to identify, draw, compare, analyze, and classify angles.</i></p> <p>Module 2: Polygons & Symmetry (Work Places 5B, 5C, 5D)</p> <p><input type="checkbox"/> <i>Students use polygons to explore parallel lines, intersecting lines, perpendicular lines, and line symmetry.</i></p> <p>Module 3: Area & Perimeter</p> <p><input type="checkbox"/> <i>Students determine the area of rectangles and squares..</i></p> <p>Module 4: Angles in Motion</p> <p><input type="checkbox"/> <i>Students investigate angle turns and rotations using their knee, write, shoulder, and elbow joints as references.</i></p>	
Vocabulary	<p><u>Unit Five Vocabulary</u></p> <p><i>Bold Italicized</i> identifies those terms for which Resource Cards are available.</p>	

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	<p><i>acute angle, angle, area, centimeter (cm), circle, circumference, congruent, degree, diameter, dimension, equilateral, triangle, fraction, hexagon, interior angle, isosceles triangle, line of symmetry, line segment, line metric system, obtuse angle, parallel, parallelogram, perimeter, perpendicular, polygon, protractor, quadrilateral, radius, ray, rectangle, rhombus, right angle, right triangle, rotation, scalene, triangle, square, centimeter (cm), square unit, square, straight angle, symmetry, trapezoid, vertex or corner, yard (yd.), zero angle</i></p> <p><u>Additional Unit Five Vocabulary</u></p> <p>asymmetrical, center, distance, ellipse, equilateral, feet, formula, horizontal, inches, intersecting, isosceles trapezoid, length, line symmetry, linear units, measure, metric units, miles, square foot, square inch, surface, vertical width</p>
<p>Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Apply the area formula for rectangles. • Identify an angle as a geometric figure formed where two rays share a common endpoint. • Identify points, lines, line segments, rays and angles (acute, right, obtuse), parallel lines, and perpendicular lines. • Draw angles (acute, right, obtuse), parallel lines, and perpendicular lines. • Classify 2-D figures based on the presence or absence of parallel lines, and angles of specified size; identify right triangles. • Identify and draw lines of symmetry; identify figures with line symmetry. <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> • Apply the area formula for rectangles. • Use a protractor to measure angles in whole degrees; sketch an angle of a specified measure. • Identify points, lines, line segments, rays and angles (acute, right, obtuse), parallel lines, and perpendicular lines. • Draw angles (acute, right, obtuse), parallel lines, and perpendicular lines. • Classify 2-D figures based on the presence or absence of parallel lines, and angles of specified size; identify right triangles. • Identify and draw lines of symmetry; identify figures with line symmetry. <p><u>Math Strategies & Models Used:</u></p> <p>Pattern Blocks</p>

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	<p>Geoboards Colored Tiles Clock Face</p> <p><u>Number Corner:</u></p> <p><u>January Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings have a primary focus on division; students learn and practice division strategies and consider division situations and contexts. Students explore geometry shapes and scaling as well as work with fractions.</p> <p><u>February Number Corner</u> focuses largely on geometry, measurement, and fractions. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to identify, draw, compare, and analyze angles. Students work with lines and polygons as well as circles. Students decompose and compose fractions as well as add and subtract fractions. Students also write equations for multi-step problems as well as explore decimals and fraction-decimal equivalents.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 4 Overview</p> <p>Family Unit 4 Overview (Spanish)</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 5A Angle Puzzles ● 5B Mosaic Game ● 5C Solving Polygon Riddles ● 5D Polygon Bingo <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Checkpoints <ul style="list-style-type: none"> ○ Angles ○ Geometry ● Work Samples <ul style="list-style-type: none"> ○ Lines & Angles ● (Screener) Pre Assessment/ Post Assessment* <ul style="list-style-type: none"> ○ Pre/Post Assessment Reflection & Goal Setting

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	Interim Assessment <ul style="list-style-type: none"> • MD • G 	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 5 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 2 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<u>Relevant Standards:</u> (Bold Priority Standards) 4.MD.3, 4.MD.5, 4.MD.6, 4.MD.7, 4.G.1, 4.G.2, 4.G.3 <u>Standards of Mathematical Practice:</u> 4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8

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<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex-grow: 1; text-align: center;"> UNIT 6: Multiplication & Division, Data & Fractions </div> <div style="text-align: right;"> Pacing: 20 +2 days </div> </div>	
Description	This unit focuses on the development and ability for students to describe, classify, and make generalizations about two-dimensional shapes with precision, in particularly quadrilaterals.
Essential Questions	<ul style="list-style-type: none"> What patterns do I notice when I am multiplying whole numbers that can help me multiply more efficiently? What is a sensible answer to a real problem? How is the area of a rectilinear figure calculated? How can I mentally compute a multiplication problem? A division problem? What are compatible numbers and how do they aid in dividing whole numbers? How are multiplication and division related to each other? What are some strategies for solving multiplication and division problems? What patterns of multiplication and division can assist us in problem solving?
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Multiplication & Division Strategies</p> <p><input type="checkbox"/> <i>Students will review division strategies and multiplication strategies.</i></p> <p>Module 2: Revisiting Area & Perimeter (Work Places 6A, 6B)</p> <p><input type="checkbox"/> <i>Students will review the area and perimeter of rectangles using division to find the unknown dimension.</i></p> <p>Module 3: Line Plots, Fractions & Division (Work Place 6C)</p> <p><input type="checkbox"/> <i>Students work with fractions and decimals to gather data which they plot, display, and analyze the data they have collected on a line plot.</i></p> <p>Module 4: More Division</p> <p><input type="checkbox"/> <i>Students reinforce their division skills and create a classroom chart for division.</i></p>

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<p style="text-align: center;">Vocabulary</p>	<p><u>Unit Six Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>area, array, centimeter (cm), data, decimal, dimension, divide, dividend, divisor, equation, equivalent, fraction, equivalent ratio, factor, foot (ft.), fraction, half, hexagon, inch (in.), kilometer (km), line plot, median, meter (m), mile (mi.), mode, multiple, multiply, perimeter, quotient, range, ratio, table, rectangle, remainder, rhombus, trapezoid, triangle, unit, whole number, yard (yd.)</i></p> <p><u>Additional Unit Six Vocabulary:</u> area model, decimeter, division, double, feet, length, measure, multiplication, partial products, square foot, strategy</p>
<p style="text-align: center;">Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Solve multi-step story problems involving only whole numbers, using addition, multiplication and division. • Multiply a 2 or 3-digit whole number by a 1-digit whole number using strategies based on place value and the properties of operations. • Use equations or rectangular arrays to explain strategies for multiplying with multi-digit numbers. • Use a visual model to explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$. • Use visual models to generate and recognize equivalent fractions. • Apply the area and perimeter formulas for a rectangle to solve a problem. • Make a line plot to display a data set comprised of measurements taken in halves, fourths, and eighths of a unit. <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> • Solve single-step story problems involving division with remainders. • Solve multi-step story problems involving only whole numbers, using addition, multiplication and division. • Multiply a 2 or 3-digit whole number by a 1-digit whole number using strategies based on place value and the properties of operations. • Multiply two 2-digit numbers using strategies based on place value and the properties of operations. • Use equations or rectangular arrays to explain strategies for multiplying with multi-digit numbers. • Divide a 2- or 3-digit number by a 1-digit number, using strategies based on place value, the properties of operations, or the relationship between multiplication and division.

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	<ul style="list-style-type: none"> • Use equations or rectangular arrays to explain strategies for dividing a multi-digit number by a 1-digit number. • Write fractions with denominators 10 and 100 in decimal notation. • Apply the area and perimeter formulas for a rectangle to solve a problem. • Make a line plot to display a data set comprised of measurements taken in halves, fourths, and eighths of a unit. <p><u>Math Strategies & Models Used:</u></p> <p>Arrays Models <i>(Four Partial Products, Two Partial Products, Over Strategy, Five is Half of Ten, Doubling & Halving, Multiplying to Divide, Partial Quotients, Over Division)</i></p> <p>Ratio Tables <i>(Over Strategy, Five is Half of Ten, Multiplying to Divide, Partial Quotients, Over Division, Equivalent Ratios)</i></p> <p><u>Number Corner:</u></p> <p>February Number Corner focuses largely on geometry, measurement, and fractions. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to identify, draw, compare, and analyze angles. Students work with lines and polygons as well as circles. Students decompose and compose fractions as well as add and subtract fractions. Students also write equations for multi-step problems as well as explore decimals and fraction-decimal equivalents.</p> <p>March Number Corner The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings primarily focus on fractions and decimals.</p>
Technology Enhancements	MLC Apps Family Unit 6 Overview Family Unit 6 Overview, Spanish Math At Home
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> • 6A Factors & Multiples

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	<ul style="list-style-type: none">• 6B Area or Perimeter• 6C Fraction Spin & Add• 6D Lowest Remainder Wins <p>Unit Assessments:</p> <ul style="list-style-type: none">• Checkpoints<ul style="list-style-type: none">◦ Area & Perimeter• Work Sample<ul style="list-style-type: none">◦ Multiplication Problem Strings• (Screener) Pre Assessment/ Post Assessment*<ul style="list-style-type: none">◦ Pre/Post Assessment Reflection & Goal Setting <p>Interim Assessment</p> <ul style="list-style-type: none">• OA• NBT• NF• MD	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 6 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 2 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>4.OA.3, 4.OA.4, 4.NBT.4, 4.NBT.5, 4.NBT.6, 4.NF.1, 4.NF.3, 4.MD.3</p> <p><u>Standards of Mathematical Practice:</u></p> <p>4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8</p>

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UNIT 7: Review & Extending Fractions, Decimals & Multi-Digit Multiplication <div style="float: right;"> Pacing: 20 +2 days </div>	
Description	Unit 7 reviews and extends skills and concepts in several areas that are foundational to the major work of fifth grade. Students hone their skills at recognizing and generating equivalent fractions, as well as comparing fractions with unlike denominators using visual models, benchmarks such as one half, and rewriting to share common denominators. Students also review some of the strategies they have developed for multi-digit multiplication over the year and explore the standard multiplication algorithm
Essential Questions	<ul style="list-style-type: none"> How can I find equivalent fractions? How can I represent fractions in different ways? How are decimals and fractions related? How can I combine the decimal length of objects I measure? How can I model decimals fractions using the base-ten and place value system? When you compare two decimals, how can you determine which one has the greater value? Why is the number 10 important in our number system?
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Comparing Fractions & Writing Equivalent Fractions</p> <p><input type="checkbox"/> <i>Students use bar models and number lines to represent, compare, and order fractions with unlike denominators.</i></p> <p>Module 2: Decimals & Decimal Fractions</p> <p><input type="checkbox"/> <i>Students will review the hundredths grid, students work in pairs to cut a grid apart and rearrange the columns to form a single meter-long strip. They use their decima strips to represent, compare, order, and add fractions with denominators 10 and 100.</i></p> <p>Module 3: Introducing the Standard Multiplication Algorithm</p> <p><input type="checkbox"/> <i>Students review strategies for solving single- and double-digit multiplication combinations, with a particular focus on the use of the area model and partial products. Students are also introduced to the standard algorithm for multiplying 2- and 3- digit by 1-digit numbers and determine when the standard algorithm is best used, and when other strategies might make more sense. The later sessions lay the groundwork for an introduction to the standard algorithm for 2-digit by 2-digit multiplication.</i></p>

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	<p>Module 4: Extending the Standard Multiplication Algorithm</p> <p><input type="checkbox"/> <i>Students are introduced to the standard algorithm for double-digit multiplication.</i></p>
Vocabulary	<p><u>Unit Seven Vocabulary</u> <i>Italicized bold identifies those terms for which Resource Cards are available.</i></p> <p><i>area, area model of multiplication, array, centimeter (cm), dimension, divide, equation, estimate, even number, expression, foot (ft.), inch (in.), kilometer (km), meter (m), mile (mi.), millimeter (mm), multiply, odd number, operation, parentheses, pattern, perimeter, product, sum or total, variable, yard (yd.)</i></p> <p><u>Additional Vocabulary:</u></p> <p>addition, arrangement, conjecture, conversion table, convert, division, evaluate, function, grouping symbols, input number, long, measure, measurement, multiplication, output number, partial products, repeated addition, replace, rule sequence, situation, square centimeters, square foot, standard algorithm, strategy, subtraction, T-chart, unknown number, value, wide</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Solving multi-step story problems involving only whole numbers, using addition, subtraction, multiplication, and division • Writing equations with a letter standing for an unknown quantity to represent a multi-step story problem • Assessing the reasonableness of answers to multi-step story problems using mental computation, rounding, or other estimation strategies • Multiplying a 2 or 3-digit whole number by a 1-digit whole number using strategies based on place value and the properties of operations • Multiplying two 2-digit numbers using strategies based on place value and the properties of operations • Using equations, rectangular arrays, or an area model to explain strategies for multiplying with multi-digit numbers • Recognizing equivalent fractions; using a visual model to explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$. • Generating a fraction equivalent to fraction $\frac{a}{b}$ by multiplying the numerator (a) and denominator (b) by the same number • Comparing two fractions with different numerators and different denominators • Using the symbols $>$, $=$, $<$ to record comparisons of two fractions with different numerators and different denominators • Adding a fraction with denominator 10 to a fraction with denominator 100 by rewriting the first fraction as an equivalent fraction with a denominator of 100

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- Writing fractions with denominator 10 or 100 in decimal notation
- Comparing two decimals numbers with digits to the hundredths place
- Using the symbols $>$, $=$, $<$ to record comparisons of two decimals numbers with digits to the hundredths place
- Explaining why one decimal number must be greater than or less than another decimal

The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:

- Solidify their understanding of grade 4 standards prior to the start of the grade five.

Math Strategies & Models Used:

Bar Models

Decimal Strips

Arrays (two-part and four-part)

Number Corner:

[March Number Corner](#) The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings primarily focus on fractions and decimals.

[April Number Corner](#) offers a variety of games and activities designed to extend students' understanding of and proficiency with many important fourth grade skills and concepts. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to explore fractions and decimals on the number line, compute with fractions, calculate the area and perimeter, explore geometric shapes and their properties, practice division facts, develop division strategies for multi-digit numbers, and create and analyze line plots.

[May Number Corner](#) focuses on various fourth grade skills. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings look toward fifth grade as students use coordinate graphing to create line graphs, multiply whole numbers by fractions, and add decimals to hundredths.

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Technology Enhancements	MLC Apps Family Unit 7 Overview Family Unit 7 Overview, Spanish Math At Home	
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> • 6A Factors & Multiples • 6B Area or Perimeter • 6C Fraction Spin & Add • 6D Lowest Remainder Wins <p>Unit Assessments:</p> <ul style="list-style-type: none"> • Checkpoints <ul style="list-style-type: none"> ◦ Problems & Equations ◦ Comparing Fractions • (Screener) Pre Assessment/ Post Assessment* <ul style="list-style-type: none"> ◦ Pre/Post Assessment Reflection & Goal Setting <p>Interim Assessment</p> <ul style="list-style-type: none"> • OA • NBT • NF • MD • G 	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 7 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Volume 3 Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<p>Relevant Standards: (Bold Priority Standards)</p> <p>4.OA.3, 4.NBT.5, 4.NF.1, 4.NF.2, 4.NF.5, 4.NF.6, 4.NF.7</p>

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		<u>Standards of Mathematical Practice:</u> 4.MP1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8
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UNIT 8: Playground Design		Pacing: 20 +2 days
Description	In the final unit of the year, students design and build scaled model playgrounds that involve simple machines.	
Essential Questions	<ul style="list-style-type: none"> • How does data help explain real-world situations? • How do we determine the most appropriate graph to use to display the data? • How do we make a line plot to display a data set? • Why are units important in measurement? • How does the area change as the rectangle's dimensions change (with a fixed perimeter)? • Where is geometry found in your everyday world? • What geometric objects are used to make geometric shapes? 	
Learning Objectives	<p>Teacher Note: <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p>Module 1: Introducing Playground Design</p> <p><input type="checkbox"/> <i>Students brainstorm a dream playground, and then use a nonfiction text and spreadsheet software to decide which of their items might pose a safety risk.</i></p> <p>Module 2: Making Decisions</p> <p><input type="checkbox"/> <i>In this module, students use data for decision making. Students make decisions based on safety issues and space. Students determine important items for the new playground and change the most important items to data they can analyze by assignment point values and tabulating the results. Students research the cost of the playground items and find the average total cost for the items they want to include. Students survey other students in the school to come up with a final list of playground items that will be fun and safe for all.</i></p> <p>Module 3: Using Scale Models for Our Playground & Field</p> <p><input type="checkbox"/> <i>Students are introduced to measurement conversions using scale factors. Students start by planning, sketching and drawing their playground to scale. They investigate the variables that affect the grassy field and create line plots and calculate dimensions, area, mass of soil, and water needs. Students calculate the cost of planting the field, and plan a letter to the parents' group outlining the measurement costs.</i></p>	

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	<p>Module 4: Building Model Playgrounds</p> <p><input type="checkbox"/> <i>Students use their scaled maps to build scale models of their playgrounds. Students then draw side views of the playground and equipment and identify simple machines, geometric shapes, and angle measures.</i></p>
<p>Vocabulary</p>	<p><u>Unit Eight Vocabulary</u> <i>Italicized bold identifies those terms for which Resource Cards are available.</i></p> <p><i>angle, bar graph, cup, gram (g), hexagon, mass, mean, range, trapezoid, variable</i></p> <p><u>Additional Unit 8 Vocabulary</u> average, composition, compost, drainage, effort, formula, fulcrum, generalization, gravity, inclined plane, length, lever, load, model, nutrients, pendulum, poll, pulley, ranking, sampling, scale, screw, simple, machine, soil, sort, spreadsheet, survey, tally, trend, wedge, wheel and axle</p>
<p>Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> ● Identifying points, lines, line segments, rays, and angles (right, acute, obtuse), parallel lines, and perpendicular lines in 2-D figures ● Drawing right, acute, obtuse angles, parallel lines and perpendicular lines ● Expressing a measurement in a large unit in terms of a smaller unit within the same system or measurement ● Identifying the relative sizes of units within a system of measurement ● Recording equivalent measurements in different units from the same system of measurement using a 2-column table ● Solving story problems involving distance, liquid volume, intervals of time, mass, and money using addition, subtraction, multiplication, or division of whole numbers, fractions and decimals. ● Applying the perimeter and area formulas for a rectangle to solve a problem ● Identifying an angle as a geometric figure formed where two rays share a common endpoint ● Using a protractor to measure angles in whole degrees; sketching an angle of a specified measure <p>The learning of this unit serves as a foundation for content that will be addressed in future units and years. Specifically, students will utilize this learning to:</p> <ul style="list-style-type: none"> ● Describe what mean, mode, or range indicate about data ● Determine the mean, mode, or range of a set of data comprising whole numbers, fractional numbers, or decimals ● Display and analyze data using spreadsheet software

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	<p><u>Math Strategies & Models Used:</u></p> <p>Students apply the different measurement strategies they’ve learned throughout the year. They use rulers, number lines, colored tiles, and simple algorithms to review and work with fractions. Students make diagrams, draw sketches, and use a 2-column table to determine the scale factors for the different measurement quantities.</p> <p><u>Number Corner:</u></p> <p><u>May Number Corner</u> focuses on various fourth grade skills. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings look toward fifth grade as students use coordinate graphing to create line graphs, multiply whole numbers by fractions, and add decimals to hundredths.</p>	
Technology Enhancements	<p><u>MLC Apps</u></p> <p><u>Family Unit 8 Overview</u></p> <p><u>Family Unit 8 Overview, Spanish</u></p> <p><u>Math At Home</u></p>	
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> There are no new Work Places introduced in this unit. After determining the priority standards, look at Work Places and determine which ones would be a effective assessment opportunities. <p>Unit Assessments:</p> <ul style="list-style-type: none"> CGA (Comprehensive Growth Assessment, Spring) <p>Interim Assessment</p> <ul style="list-style-type: none"> NF MD G 	
Alignments	Textbook	<p>Bridges in Mathematics Teachers Guide, Unit 8</p> <p>Bridges in Mathematics Assessment Guide</p> <p>Bridges in Mathematics Intervention</p> <p>Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>

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	CCS	<u>Relevant Standards:</u> (Bold Priority Standards) 4.G.1, 4.MD.1, 4.MD.2, 4.MD.3, 4.MD.5, 4.MD.6 <u>Standards of Mathematical Practice:</u> 4.MP.1, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.6, 4.MP.7, 4.MP.8
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Appendix

Teachers should use the district assessment calendar, the math assessment calendar, and the District IAB documents to plan for assessments.

[3-5 Math Domain Progressions](#)

[Achieve the Core Grades 3-5](#)

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[I Can Statements Units 1-8](#)

[Grade 4 Exit Tickets](#) (created using Pre-Assessment)

[Digital Math Journal](#)

[Unit 1 Warm Ups](#)

[What does it mean to model in mathematics?](#)

[Post Assessment* Folder](#) (includes screener and screener resources, revised assessment, answer key, student reflection, ...)

SBAC Resources

- [Smarter Balanced Construct Relevant Vocabulary for Mathematics](#)
- [Math Interim Assessment Blocks Blueprint](#)
- [Math Focused Interim Assessment Blocks Blueprint](#)
- [Connecticut Mathematics Summative Assessment Blueprint](#)
- [SBAC Practice Tests and Scoring Guides](#)

Bridges Resources

- [Scope & Sequence](#)
- [Grade 4 Vocabulary](#)
- [Grade 4 Work Place Sentence Frames](#)
- [Math Strategy Posters](#)
- [Math Practices Grades 3-5 Posters](#)
- [Master Materials List](#)
- [Number Corner Calendar Grid Answer Key](#)
- [Number Corner Key Questions](#)

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Additional Resources

Grade level drive