



Grade 5 Math Curriculum

Grade 5 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> <div>1. Make sense of problems and persevere in solving them</div> <div>6. Attend to precision</div> </div>	<div> <div>2. Reason abstractly and quantitatively</div> <div>3. Construct viable arguments and critique the reasoning of others</div> <div>4. Model with mathematics</div> <div>5. Use appropriate tools strategically</div> <div>7. Look for and make use of structure.</div> <div>8. Look for and express regularity in repeated reasoning.</div> </div>	<div> <div> <h3>Standards for Mathematical Practice</h3> <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> </div> </div>
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- Reasoning and explaining

Modeling and using tools

Seeing structure and generalizing

Overarching habits of mind of a productive mathematical thinker.

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Grade 5 Domains, Clusters and Critical Areas of Focus

Domains	Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations: Fractions	Measurement & Data	Geometry
Clusters	<p>Write and interpret numerical expressions.</p> <p>Analyze patterns and relationships.</p>	<p>Understand the place value system.</p> <p>Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p>Use equivalent fractions as a strategy to add and subtract fractions.</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Solve problems involving measurement and estimation of intervals of time, liquid, volumes and masses of objects.</p> <p>Represent and interpret data.</p> <p>Geometric measurement: understand concepts of area and relate area to multiplication and to addition Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</p>	<p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p> <p>Classify two-dimensional figures into categories based on their properties.</p>

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In Grade 5, instructional time should focus on three critical areas:

1. Developing fluency with addition and subtraction of fractions, developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions)

- Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

2. Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operation

- Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

3. Developing understanding of volume

- Students recognize volume as an attribute of three-dimensional space. They understand that volume can be quantified by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to solve real world and mathematical problems

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UNIT 1: Expressions, Equations & Volume

Pacing:
20 +2 days

Description	This unit focuses on using the study of volume to review and extend a host of skills and concepts related to multiplication.
Essential Questions	<ul style="list-style-type: none"> • What does a math community of learners look and sound like? • What models and strategies can help us multiply numbers? • What models and strategies can help us multiply and divide double digit numbers?
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 & Volume (Work Place 1A The Product Game)</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 complete Mathographies, reflective writing that gives a glimpse into their understanding and beliefs about mathematics. Students work with properties of multiplication and volume.</i></p> <p>Module 2: Factors, Multiples & the Associative Property (Work Place 1B The Multiple Game)</p> <p><input type="checkbox"/> <i>Students continue their work with fractions, multiples, and properties of multiplication. They explore surface area in context and engage in math forums.</i></p> <p>Module 3: Multiplication Strategies (Work Place 1C Beat the Calculator)</p> <p><input type="checkbox"/> <i>Students continue to work on multi-digit multiplication strategies.</i></p> <p>Module 4: From Multiplication to Division (Work Place 1D Quotients Win)</p> <p><input type="checkbox"/> <i>Students review the connection between multiplication and division, looking specifically at how the area model can be used for combinations in which 2- and 3-digit numbers are divided by 1- and 2-digit numbers. Students review some of the ways in which the remainder in a division problem can be handled and consider the fact that the context determines how the remainder is handled.</i></p>
Vocabulary	<p><u>Unit One 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, base, commutative property of multiplication, composite number, dimension, divide, dividend, divisor, equation, estimate, expression, factor, half, multiple, multiply, open array, parentheses, prime</i></p>

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	<p><i>number, product, quotient, ratio table, rectangular prism, remainder, sum or total, surface area, volume</i></p> <p><u>Additional Unit One Vocabulary</u></p> <p>column, double/doubling, evaluate, half, halving, height, length, measurement, number relationship, partial products, relationship, row, strategy, value, width</p>
<p>Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Solving multi-step story problems involving division with remainders. • Finding all factor pairs for a whole number between 1 and 100, demonstrating an understanding that a whole number is a multiple of each of its factors and determining whether a whole number between 1 and 100 is a multiple of a given 1-digit number. • Multiplying a 2-, 3-, or 4-digit whole number by a 1-digit whole number, or two 2-digit numbers using strategies based on place value and the properties of operations and using an equation, array, or rectangular array to explain strategies for multiplying with multi-digit numbers. • Dividing a 2-digit number by a 1-digit number, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division and using rectangular arrays and area models to explain strategies for dividing a 2-digit number by a 1-digit number. <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 and evaluate numerical expressions with parentheses. • Write a simple expression to record calculations with numbers, and interpret numerical expressions without evaluating them. • Demonstrate an understanding that unit cubes can be used to measure the volumes of other solid figures. • Demonstrate an understanding that a solid figure that can be packed without gaps or overlaps by n unit cubes has a volume of n cubic units. • Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. • Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes. <p><u>Math Strategies & Models Used:</u></p> <p>Area model (both closed and open arrays)</p> <p>Ratio tables</p> <p>Equations</p>

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	<p><u>Number Corner:</u></p> <p>September Number Corner reviews fourth grade skills and concepts as they begin moving to fifth grade content. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will focus on addition and subtraction of whole numbers, decimals and fractions, multiples and factors, and volume.</p> <p>October Number Corner focuses on key fifth grade skills . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will focus on volume, data collection and coordinate graphing, writing and evaluating expressions with grouping symbols, and addition and subtraction of decimals and fractions with unlike denominators.</p>	
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 1 Overview</p> <p>Family Unit 1 Overview, Spanish</p>	
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 1A The Product Game ● 1B The Multiple Game ● 1C Beat the Calculator ● 1D Quotients Win <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Checkpoints <ul style="list-style-type: none"> ○ Numerical Expressions ○ Multiplication/Volume ● Work Samples <ul style="list-style-type: none"> ○ Boxes ● Cardboard Forum ● (Screener) Pre Assessment/ Post Assessment* <p>SBAC Preparation</p> <p>Interim Assessment</p> <ul style="list-style-type: none"> ● OA ● NBT ● Volume Concepts ● Numerical Expressions 	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 1

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		<p>Bridges in Mathematics Assessment Guide</p> <p>Bridges in Mathematics Intervention</p> <p>Bridges in Mathematics Number Corner Volume 1</p> <p>Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>
	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>3.OA.7, 4.OA.4, 4.NBT.5, 5.OA.1, 5.OA.2, 5.NBT.6, 5.MD.3, 5.MD.4, 5.MD.5</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8</p>

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UNIT 2: Adding & Subtracting Fractions

Pacing:
20 +2 days

Description	This unit focuses on adding and subtracting fractions with unlike denominators, using a variety of strategies to find common denominators
Essential Questions	<ul style="list-style-type: none"> • What models and strategies can help us add and subtract fractions? • What models and strategies can help us find common denominators?
Learning Objectives	<p>Teacher Note: Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</p> <p>Module 1: Adding & Subtracting Fractions (Work Place 2A Clock Fractions)</p> <p><input type="checkbox"/> This module focuses on using money and clocks as models for adding and subtracting fractions. Students work with fractions, mixed numbers, and improper fractions</p> <p>Module 2: Common Denominators (Work Places 2B Racing Fractions and 2C Target Practice)</p> <p><input type="checkbox"/> This module focuses on investigating the multiplication of whole numbers by fractions. Students learn to use a double number line as a tool to add and subtract fractions with unlike denominators. Students investigate ratios as quotients, and then they use ratio tables to find equivalent fractions in order to add and subtract fractions.</p> <p style="padding-left: 40px;"><i>*Teacher note: Use Work Places 1A and 1B that focus on work places to have students think about common denominators and support thinking of common denominators as multiples and not as products of unlike denominators. Use double number line as resources, consider fraction strips.</i></p> <p>Module 3: Ratio Tables and the Multiplication Tables</p> <p><input type="checkbox"/> This module focuses on finding common denominators as a step toward adding and subtracting fractions with unlike denominators. Students use visual models and tables to make sense of different ways to generate equivalent fractions that share a common denominator. They also solve story problems that require them to rewrite fractions with a common denominator in order to add or subtract them.</p> <p>Module 4: Module 4: LCMs & GCFs</p> <p><input type="checkbox"/> This module focuses on using money and clocks as models for adding and subtracting fractions. Students work with fractions, mixed numbers, and improper fractions</p>

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Vocabulary	<p><u>Unit Two Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>common denominator, decimal, denominator, equivalent fraction, equivalent fractions, expression, factor, fraction, hundredth, improper fraction, lowest terms, mixed number, multiple, numerator, product, ratio table, ratio, tenth, unit fraction</i></p> <p>Additional Unit Two Vocabulary</p> <p>clock face, decimal notation, dime, double number, line, evaluate, greatest common factor, hour (hr.), least common denominator, least common multiple, minute (min.), model, penny, quarter, simplify, sixtieth, twelfth, twentieth</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <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"> • Add and subtract fractions with unlike denominators, including mixed numbers and rewrite fractions with unlike denominators as equivalent fractions with a common denominator in order to find their sum or difference. • Solve story problems involving addition and/or subtraction of fractions referring to the same whole, with like and unlike denominators, mentally estimate the answers to story problems involving addition of fractions with like and unlike denominators, and assess the reasonableness of answers to story problems involving addition of fractions with like and unlike denominators. <p><u>Math Strategies & Models Used:</u></p> <p>Money</p> <p>Clock</p> <p>Double Number Line</p> <p><u>Number Corner:</u></p> <p><u>October Number Corner</u> focuses on key fifth grade skills. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will focus on volume, data collection and coordinate graphing, writing and evaluating expressions with grouping symbols, and addition and subtraction of decimals and fractions with unlike denominators.</p> <p><u>November Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will address a variety of fifth grade skills and concepts including classifying shapes according to attributes, strengthening place value skills by collecting a meter a day and converting metric measurements, using grouping symbols to simplify expressions, and using money and clock models to subtract fractions.</p>

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Technology Enhancements	MLC Apps Family Unit 2 Overview Family Unit 2 Overview, Spanish Math At Home	
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 2A Clock Fractions ● 2B Racing Fractions ● 2C Target Practice <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Work Samples <ul style="list-style-type: none"> ○ Fractions ● Better Buy Forum ● Checkpoints <ul style="list-style-type: none"> ○ Fraction Addition and Subtraction ○ Working with Fractions ● (Screener) Pre Assessment/ Post Assessment* <p>Interim Assessment</p> <ul style="list-style-type: none"> ● OA ● MD ● Add and Subtract with Equivalent Fractions 	
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

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	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>5.NF.1, 5.NF.2, 5.NF.3, 5.NF.4a</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8</p>
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UNIT 3: Place Value & Decimals

Pacing:
20 + 2 days

Description	This unit focuses on place value, from reading, writing, and comparing decimals to rounding and examining the decimal patterns of multiplying and dividing numbers by 10. Place value understandings are used to convert within a measurement system and they use both whole number strategies and place value understanding to add and subtract decimals to hundredths. Students model, solve, and pose long division problems.
Essential Questions	<ul style="list-style-type: none"> • What strategies can be used to efficiently add and subtract decimals? • What patterns exist when multiplying and dividing by ten? • What patterns exist when multiplying and dividing by one hundred? • How are fractions and decimals related? • How can I efficiently convert metric units? • What strategies can be used efficiently to solve multi-digit division equations?
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: Whole Number & Decimal Place Value (Work Place 3A)</p> <p><input type="checkbox"/> <i>This module focuses on place value, with an emphasis on decimal numbers. Problem strings and games help students develop strategies for adding and subtracting with decimals to the hundredths place. Students explore patterns for multiplying and dividing by 100. Students review a place value display from the previous year (Great Wall of Base Ten) and extend it to include tenths and hundredths. Students model, read and compare decimals, and consider the connections between decimals, fractions and money amounts.</i></p> <p>Module 2: Adding & Subtracting Decimals (Work Place 3B, 3C, 3D)</p> <p><input type="checkbox"/> <i>Students deepen their understanding of place value in decimal numbers, equivalences between decimals, fractions and money, and adding and subtracting decimals. Students also work with models for thousands and ten-thousandths. Students use a metric number line to place, order and round decimals.</i></p> <p style="padding-left: 40px;"><i>*Teacher note: Rounding one additional practice day is suggested for both sessions 3 and 7.</i></p> <p>Module 3: Conversions</p> <p><input type="checkbox"/> <i>Students use units for computer memory (bytes, kilobytes, megabytes, and gigabytes) to explore conversions within a given system of measurement. Students continue to add and subtract decimals in a vertical format and solve story problems involving decimal amounts.</i></p> <p style="padding-left: 40px;"><i>*Teacher notes: Skip M2S2 “Memory Bytes” and instead complete Checkpoint “Decimal Point Place Value” M3S1 introduction to metric system and M3S3 and M2S4 over a two day period.</i></p>

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	<p>Module 4: Division & the Area Model (Work Place 3E)</p> <p><input type="checkbox"/> <i>Students continue to investigate the area model for division, taking up where they left off at the end of Unit 1. Students use base ten area pieces to model and solve division problems, but move to labeled sketches on base ten grid paper.</i></p>
Vocabulary	<p><i>Bold Italicized</i> identifies those terms for which Resource Cards are available.</p> <p><i>algorithm, area model of multiplication, base ten numeral (standard form), centimeter (cm), decimal, difference, dimension, divide, dividend, divisor, estimate, expanded form, exponent expression, fraction, gram (g), hundredth, kilogram (kg), kilometer (km), liter (l), meter (m), metric system, milligram (mg), milliliter (ml) millimeter (mm) multiply pattern quotient rounding sum or total ten-thousandth tenth thousandth</i></p> <p>Additional Vocabulary:</p> <p>byte, compare, decimeter, digit, exponential notation, gigabyte, kilobyte, megabyte, minimal collection, model, number name, order, place value, powers of 10, removal, share, ten-thousandth, unknown</p>
Suggested Learning Activities	<p>Math Strategies & Models Used:</p> <p>Give and Take</p> <p>Finding the Difference and Removing</p> <p>Place Value Shift</p> <p>Base Ten Blocks: Number Pieces App</p> <p>Open number lines; Number Line App</p> <p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Reading and writing decimals to thousandths represented with base-ten numerals, number names, and expanded form. • Comparing pairs of decimals to thousandths, based on an understanding of what the digit in each place represents; using $<$, $>$, $=$ symbols to record comparisons • Rounding decimals to the nearest one, tenth, and hundredth

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- Adding and subtracting decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and the relationship between addition and subtraction
- Using written numbers and symbols to representing strategies for computing with decimals to hundredths

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:

- Demonstrate an understanding that in a multi-digit number, each digit represents ten times what it represents in the place to its right
- Demonstrate an understanding that in a multi-digit number, each digit represents one tenth what it represents in the place to its left
- Explain patterns in the number of zeros in the product when multiplying by powers of 10
- Explain patterns in the placement of the decimal point when multiplying or dividing by powers of 10
- Use equations, rectangular arrays, and area models to explain strategies for dividing multi-digit whole numbers
- Add and subtract fractions with unlike denominators, including mixed numbers
- Convert among different-size standard measurement units within a given system

Math Strategies & Models Used:

Give and Take

Finding the Difference and Removing

Place Value Shift

Base Ten Blocks: [Number Pieces App](#)

Open number lines; [Number Line App](#)

Number Corner:

November Number Corner The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will address a variety of fifth grade skills and concepts including classifying shapes according to attributes, strengthening place value skills by collecting a meter a day and converting metric measurements, using grouping symbols to simplify expressions, and using money and clock models to subtract fractions.

December Number Corner The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will focus on work with decimals and fractions as they measure each other's height and foot length and the use of ratio tables as a model of whole number and decimal multiplication and division.

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Technology Enhancements	MLC Apps Family Unit 3 Overview Family Unit 3 Overview, Spanish Math At Home	
Assessments	<p>Work Places:</p> <ul style="list-style-type: none">• 3A Beat the Calculator: Fractions• 3B Draw & Compare Decimals• 3C Round & Add Tenths• 3D Target One• 3E Division Showdown <p>Unit Assessments:</p> <ul style="list-style-type: none">• Checkpoints<ul style="list-style-type: none">o Decimal Place Value 1o Decimal Place Value 2• (Screener) Pre Assessment/ Post Assessment* <p>Interim Assessment</p> <ul style="list-style-type: none">• OA• NBT• Convert Measurements• Number and Operations in Base Ten• Place Value System	
Alignments	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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	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>5.NBT.1, 5.NBT.2, 5.NBT.3a, 5.NBT.3b, 5.NBT.4, 5.NBT.6, 5.NBT.7, 5.NF.1, 5.MD.1</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8</p>
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<div> <div>UNIT 4: Multiplying & Dividing Whole Numbers & Decimals</div> <div>Pacing: 20 + 2 days</div> </div>	
Description	<p>This unit focuses on multiplication and division strategies, including the standard multiplication algorithm. In the first two modules, students investigate a number of strategies that capitalize on their estimation and mental math skills, help them continue to develop a strong number sense, and leverage the relationship between multiplication and division. In module 3, students are formally introduced to the standard algorithm after reviewing the area model and partial products, and module 4 uses the area model and ratio tables to reinforce the connection between multiplication and division in order to help students develop a degree of comfort with long division</p>
Essential Questions	<ul style="list-style-type: none"> • What is the connection between multiplication and division? • How can I use money as a tool to help solve multiplication and division problems with decimals? • How can I use previously learned strategies to support the standard algorithm for multiplication? • How can multiplication support my understanding of long division?
Learning Objectives	<p><i>Teacher note: 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 (Work Place 4A)</p> <p><input type="checkbox"/> <i>Students explore a variety of strategies for solving multiplication and division problems. This relationship is explored through problem strings, Half-Tens facts, doubling & halving, and the connection between decimals, fractions, and whole numbers. The Work Place, The Product Game 2, reinforces these skills. Students are also exposed to multiplying decimals through money amounts.</i></p> <p>Module 2: More Multiplication & Division Strategies (Work Places 4B)</p> <p><input type="checkbox"/> <i>Through the context of money, students investigate multiplication and division with decimals as they find the costs of making homemade items to sell. In the process, they explore the relationships between quarters of dollars ($\frac{1}{4}$ and 0.25; $\frac{3}{4}$ and 0.75) and how these relationships help in solving combinations that involve multiplying or dividing by 25 and 75, as well as closely related numbers such as 24, 26, 74, and 76.</i></p> <p style="margin-left: 40px;">■ <i>Teacher note: Use student book 121 to review. Use BAR MODEL TAPE DIAGRAM to have students solve this problem. (U2 test #3 as well).</i></p> <p>Module 3: From Array to Algorithm (Work Place 4C)</p> <p><input type="checkbox"/> <i>Teachers formally introduce the standard multiplication algorithm after reviewing partial products and the area model. Students then</i></p>

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	<p><i>take a look at all of the strategies and methods for multiplication and determine when best to use each. The Work Place, Beat the Calculator: Multiplication gives students an opportunity to practice these strategies.</i></p> <p>Module 4: Multiplying to Divide (Work Place 4D, 4E)</p> <p><input type="checkbox"/> Unit 4 concludes with students applying what they have learned about multiplication and ratio tables to solving long division story problems. Building on the division work that was introduced in Units 1 and 2, students move from rectangular arrays sketched on grid paper to open arrays to a method of numeric recording that resembles the standard algorithm for long division with a couple of important differences.</p>
Vocabulary	<p><u>Unit Four Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>area, array, dimension, divide, dividend, divisor, equation, estimate, expression, factor, half, multiply, product, quotient, ratio, table, sum or total</i></p> <p>Additional Unit Four Vocabulary</p> <p>column, divisible/divisibility, division, double, error analysis, estimation, evaluate, multiplication, open array, partial products, regroup, row, standard algorithm</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Various multiplication and division strategies with whole numbers. • Write and evaluate numerical expressions with parentheses. <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"> • Use the standard algorithm with fluency to multiply multi-digit whole numbers. • Divide a 2, 3, or 4-digit whole number by a 2-digit whole number using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. • Use equations, rectangular arrays, or area models to explain strategies for dividing multi-digit whole numbers. • Multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value and properties of operations or the relationship between multiplication and division. • Use written numbers and symbols to represent strategies for computing with decimals to hundredths. • Relate strategies for computing with decimals to hundredths to written methods. • Explain the reasoning behind strategies for computing with decimals to hundredths.

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	<ul style="list-style-type: none"> • Multiply a whole number by a fraction. • Convert among different-sized standard measurement units within a given measurement system. <p><u>Math Strategies & Models Used:</u></p> <p>Ratio Tables, Area Model</p> <p>Using Quarters, Over & Under, Doubling & Halving</p> <p>Multiplicative strategies Posters</p> <p>Number lines Number line app</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 focus on work with decimals and fractions as they measure each other's height and foot length and the use of ratio tables as a model of whole number and decimal multiplication and division.</p> <p><u>January Number Corner</u> focuses on work on adding, subtracting, and multiplying fractions and decimals. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to analyze and compare patterns, graph ordered pairs based on those patterns, and write expressions and equations to represent the patterns. Students find the volume of figures composed of rectangular prisms, and use strategies for multiplying whole numbers and decimals are represented with ratio tables.</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"> • 4A The Product Game Version 2 • 4B Multiplication Battle • 4C Beat the Calculator: Multiplication • 4D Estimate & Check • 4E Lowest Remainder Wins <p>Unit Assessments:</p> <ul style="list-style-type: none"> • Checkpoints <ul style="list-style-type: none"> o Multiplication Algorithm

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	<ul style="list-style-type: none"><ul style="list-style-type: none">o Multiplication & Division● Work Samples<ul style="list-style-type: none">o Multiplication● (Screener) Pre Assessment/ Post Assessment*<ul style="list-style-type: none">o Pre/Post Assessment Reflection & Goal Setting <p>Interim Assessment</p> <ul style="list-style-type: none">● OA● NBT● NF● MD	
Alignments	Textbook	<p>Bridges in Mathematics Teachers Guide, Unit 4</p> <p>Bridges in Mathematics Assessment Guide</p> <p>Bridges in Mathematics Intervention</p> <p>Bridges in Mathematics Number Corner Volume 2</p> <p>Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>
	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>5.OA.1, 5.OA.2, 5.NBT.5, 5.NBT.6, 5.NBT.7, 5.NF.4a, 5.MD.1, 4.OA.4, 4.NBT.5,</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8</p>

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UNIT 5: Multiplying & Dividing Decimals

Pacing:
20 +2 days

Description	This unit focuses on extending the understanding of multiplication and division to working with fractions.
Essential Questions	<ul style="list-style-type: none"> • What happens to the product when a whole number is multiplied by a fraction? • How can geoboards support my understanding of multiplying a fraction by a fraction? • What generalizations can be made about multiplying with fractions? • What is the difference between sharing and grouping division and how can this support my understanding of dividing whole numbers by unit fractions and unit fractions by whole numbers?
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: Multiplying Whole Numbers by Fractions (Work Place 5A)</p> <p><input type="checkbox"/> <i>Students begin with an in-depth study of what happens when you multiply a whole number by a fraction. The Work Place, Target One Fractions, supports students in developing strategies for this, in addition to discussion, problem solving, and a problem string.</i></p> <p>Module 2: Multiplying Fractions by Fractions</p> <p><input type="checkbox"/> <i>Students use a geoboard to model and solve simple combinations such as $\frac{1}{2} \times \frac{1}{4}$ and $\frac{1}{4} \times \frac{1}{4}$, and then learn to make sketches to model and solve problems.</i></p> <p>Module 3: More Fraction by Fraction Multiplication (Work Places 5B)</p> <p><input type="checkbox"/> <i>Students continue their study of fraction-by-fraction multiplication, refining the use of rectangular arrays to model, solve, and think sensibly about combinations and story problems. Students then are guided to make generalizations about multiplying fractions by fractions, which the Work Place Tic-Frac-Tow reinforces.</i></p> <p>Module 4: Dividing Fractions & Whole Numbers</p> <p><input type="checkbox"/> <i>Students start the module by reviewing sharing and grouping divisions. Students then explore dividing whole numbers by unit fractions and unit fractions by whole numbers.</i></p>

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Vocabulary	<p><u>Unit Five Vocabulary</u></p> <p><i>Bold Italicized identifies those terms for which Resource Cards are available.</i></p> <p><i>acute angle, acute triangle, array, associative property of multiplication, commutative property of multiplication, denominator, dimension, divide, equation, equivalent fractions, estimate, expression, factor, fraction, improper fraction, mixed number, multiply, numerator, perimeter, product, quotient, rectangle, square unit, whole number</i></p> <p>Additional Unit Five Vocabulary</p> <p>division, greater than, group, grouping, length, less than, linear unit, rectangular array, sharing, simplify, visual fraction model</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Multiply a whole number by a fraction. • Solve story problems involving multiplying a whole number by a fraction. • Add and subtract fractions with unlike denominators. • Rewrite fractions with unlike denominators as equivalent fractions with a common denominator in order to find their sum or difference. <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 story problems involving multiplication of fractions and mixed numbers. • Multiply a fraction by a fraction. • Solve story problems involving multiplying a fraction by a fraction. • Find the area of a rectangle with fractional side lengths can be found through tiling or by multiplying the side lengths. • Represent the product of two fractions as an array whole dimensions are the two fractions being multiplied. • Interpret multiplication as scaling. • Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. • Divide a unit fraction by a whole number. • Use a visual model to represent division of a unit fraction by a whole number. • Divide a whole number by a unit fraction. • Use a visual model to represent division of a whole number by a unit fraction. • Solve story problems involving division of a unit fraction by a whole number. • Solve story problems involving division on a whole number by a unit fraction. <p><u>Math Strategies & Models Used:</u></p>

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	<p>Area Model</p> <p>Number Line</p> <p>Discrete Objects</p> <p>Number Corner:</p> <p>January Number Corner focuses on work on adding, subtracting, and multiplying fractions and decimals. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to analyze and compare patterns, graph ordered pairs based on those patterns, and write expressions and equations to represent the patterns. Students find the volume of figures composed of rectangular prisms, and use strategies for multiplying whole numbers and decimals are represented with ratio tables.</p> <p>February Number Corner The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings focus on using the area model to make sense of multiplication with fraction. They also explore patterns in the number of 0s and in the placement of the decimal point when multiplying and dividing by power of 10. Students develop strategies for multiplying a fraction by a whole number.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 5 Overview</p> <p>Family Unit 5 Overview, Spanish</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> • 5A Target One Fractions • 3A Beat the Calculator: Fractions • 5B Tic-Frac-Toe <p>Unit Assessments:</p> <ul style="list-style-type: none"> • Checkpoints <ul style="list-style-type: none"> ◦ Whole Number Times a Fraction ◦ Fraction Times a Fraction • (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 • NF • MD

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Alignments	Textbook	<p>Bridges in Mathematics Teachers Guide, Unit 5</p> <p>Bridges in Mathematics Assessment Guide</p> <p>Bridges in Mathematics Intervention</p> <p>Bridges in Mathematics Number Corner Volume 2</p> <p>Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>
	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>5.NF.1, 5.NF.4a, 5.NF.4b, 5.NF.5b, 5.NF.6, 5.NF.7a, 5.NF.7b, 5.NF.7c</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP.1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8</p>

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UNIT 6: Graphing, Geometry & Volume

Pacing:
20 +2 days

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"> • How can I identify relationships and patterns between corresponding terms graphed on a coordinate plane? • How can examining shape hierarchies help us determine the properties of shapes? • How can I use the array model to multiply mixed numbers? • How does the doubling and halving strategy help me multiply fractions with mixed numbers?
Learning Objectives	<p>Module 1: Graphing Ordered Pairs (Work Place 6A)</p> <p><input type="checkbox"/> <i>Students build cube and tile arrangements to determine ordered pairs. The ordered pairs are graphed on a coordinate plane and analyzed.</i></p> <p>Module 2: Classifying Polygons</p> <p><input type="checkbox"/> <i>Students will review the properties of 2-D shapes and patterns and use shape hierarchies to examine the relationships among the properties of shapes.</i></p> <p>Module 3: Volume (Work Place 6B, 6C)</p> <p><input type="checkbox"/> <i>Students move from counting items toward dimensional measures to finding volume using the formula $V = l \times w \times h$.</i></p> <p>Module 4: Banners & Flags</p> <p><input type="checkbox"/> <i>Students design banners and flags and use ratios and dimensions to calculate the area in square feet. Students also review fraction and mixed number multiplication.</i></p>
Vocabulary	<p><u>Unit Six Vocabulary</u></p> <p><i>Bold Italicized</i> identifies those terms for which Resource Cards are available.</p>

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	<p><i>area, angle area, base, centimeter (cm), congruent, coordinate plane, coordinates, cube, cubic unit, dimension, edge, equation, equilateral triangle, expression, factor, foot (ft.), fraction, hexagon, inch (in.), irregular, polygon, isosceles triangle, kite, mixed number, multiply, obtuse angle, obtuse triangle, parallel, parallelogram, pattern, pentagon, perimeter, point, polygon, product, quadrilateral, ratio, rectangle, rectangular prism, rhombus, right angle, right triangle scalene triangle, square, trapezoid, vertex or corner, volume, whole number, x-axis, y-axis</i></p> <p>Additional Unit Six Vocabulary:</p> <p>adjacent, area model, arrangement, category, closed figure, coordinate grid, coordinate points, cubic centimeter, cubic inch, cubic inches, formula, graph, height hierarchy, interior, irregular, polygon, length, linear pattern, multiplication, nonlinear pattern, ordered pair, point, properties, property, regular polygon, sequence, side, square foot, width</p>
<p>Suggested Learning Activities</p>	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> • Understand the coordinate plane • Understand patterns with numbers and shapes • Perimeter and area • Understanding categories of shapes and 2-dimensional figures <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"> • Understand the four quadrants of the coordinate plane • Find the area parallelograms, triangles and other polygons • Work with algebraic expressions and ratios <p><u>Math Strategies & Models Used:</u></p> <p>Coordinate Grids</p> <p>Shape Hierarchies</p> <p>Paper Nets</p> <p>The Area Model for Multiplication</p> <p>MLC Geoboard App</p> <p><u>Number Corner:</u></p>

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	<p><u>February Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings focus on using the area model to make sense of multiplication with fraction. They also explore patterns in the number of 0s and in the placement of the decimal point when multiplying and dividing by power of 10. Students develop strategies for multiplying a fraction by a whole number.</p> <p><u>March Number Corner</u> The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings gives students practice using the standard algorithm for multiplying multi-digit whole numbers and helps them apply the associative property, with place value patterns, to multiply related decimal numbers. Students are given a brand new pencil at the beginning of the month to use: each week, students measure their pencils to the nearest eighth of an inch and create a line plot with the data, which they use to solve computation problems. Students practice division and write their own problems. Students also add and subtract fractions, where the fractions are mixed numbers and the addition problems have multiple addends.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 6 Overview</p> <p>Family Unit 6 Overview, Spanish</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 6A Dragon's Treasure ● 6B Polygon Search ● 6C Volume Bingo <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Checkpoints <ul style="list-style-type: none"> ○ Graphing Patterns ○ Shape Classification ○ Multiplying Mixed Numbers & 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 ● NF ● MD ● G

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Alignments	Textbook	<p>Bridges in Mathematics Teachers Guide, Unit 6</p> <p>Bridges in Mathematics Assessment Guide</p> <p>Bridges in Mathematics Intervention</p> <p>Bridges in Mathematics Number Corner Volume 2</p> <p>Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book</p>
	CCS	<p><u>Relevant Standards:</u> (Bold Priority Standards)</p> <p>5.OA.3, 5.NBT.2, 5.NBT.6, 5.NBT.7, 5.NF.7, 5.NF.4, 5.NF.6, 5.MD.5, 5.G.1, 5.G.2, 5.G.3, 5.G.4</p> <p><u>Standards of Mathematical Practice:</u></p> <p>5.MP.1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.</p>

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UNIT 7: Division & Decimals

Pacing:
20 +2 days

Description	Students continue their study of division, including its relationship to multiplication.
Essential Questions	<ul style="list-style-type: none"> • How can I multiply and divide multi-digit numbers? • How can I perform addition, subtraction, multiplication and division with fractions? • How can I solve story problems with fractions?
Learning Objectives	<p>Module 1: Divisions of Fractions & Whole Numbers (Work Place 7A)</p> <p><input type="checkbox"/> <i>This module launches a unit-long investigation of division, including multi-digit division with whole numbers and decimals, and fraction division. Students are introduced to partial quotients and equivalent ratios. New problem contexts, in which division and rate are linked, as in cups of fruit needed per pizza and minutes run or walked per mile, promote new way of thinking about division.</i></p> <p>Module 2: One-by-Two Digit Multiplication (Work Place 7B)</p> <p><input type="checkbox"/> <i>Module 2 provides students with many different opportunities to review and extend their strategies for solving contextual and non-contextual problems involving multi-digit as well as fraction division. There is a consistent focus throughout the module on partitive and quotative -or sharing and grouping - division.</i></p> <p>Module 3: Powers of Ten</p> <p><input type="checkbox"/> <i>Students review and extend their understandings of number and operation in base ten. Students examine and discuss the effects of multiplying and dividing whole numbers and decimals by powers of 10.</i></p> <p>Module 4: Decimal Multiplication & Division</p> <p><input type="checkbox"/> <i>Students share strategies for estimating the results of decimal multiplication and division, and use familiar models - including ratio tables, open arrays, and long division notation - to find the answers with accuracy and understanding.</i></p>
Vocabulary	<p><u>Unit Seven Vocabulary</u></p> <p><i>Italicized bold identifies those terms for which Resource Cards are available.</i></p>

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	<p><i>array, decimal, dimension, divide, dividend, divisor, equation, estimate, exponent, expression, fraction, hundredth, mile (mi.), multiple, multiply, operation, parentheses, pattern, product, quotient, ratio table, ratio, remainder, tenth, thousandth, unit fraction, whole number</i></p> <p>Additional Vocabulary:</p> <p>absorption, active solar design, decimal number, decimal point, distance, division, equivalent, equivalent ratio, minute (min.), multiplication, multiplier, partial products, partial quotient, partitive, place value, powers of 10, quotative, rate, sharing, strategy, ten-thousandth</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> Recognizing that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left Explaining patterns in the number of zeros in the product when multiplying by powers of 10 Explaining patterns in the placement of the decimal point when multiplying or dividing by powers of 10 Denoting powers of 10 with whole-number exponents Multiplying and dividing decimals to hundredths, using concrete models and strategies based on place value, and explaining the reasoning behind these strategies Relating strategies for computing with decimals to hundredths to written methods Using written numbers and symbols to represent strategies for computing with decimals to hundredths <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"> Solidify their understanding of grade 5 Numbers in Base Ten standards prior to the start of the grades 6-8 grand band. <p><u>Math Strategies & Models Used:</u></p> <p>Multiplying to Divide</p> <p>Partial Quotients</p> <p>Over and Unders</p> <p>Equivalent Ratios</p> <p>Open Arrays</p>

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	<p>Clock Faces (fractions)</p> <p>Rectangular Arrays</p> <p><u>Number Corner:</u></p> <p>March Number Corner focuses on deepening their understanding of time and data, measurement, area and perimeter, multiplication facts, and fractions, mixed numbers and improper fractions . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings will renew and extend proficiency with these skills and concepts, while also introducing new concepts such as improper fractions.</p> <p>April Number Corner features practice finding the volume of rectangular solids. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings allow students to calculate with fractions. Students add $\frac{3}{4}$ each day to two parallel collections: one of money and the other time. Students also focus on multiplying fractions and operations with decimals. Students pose and solve their own problems, focusing on operations with fractions. Students also develop strategies for multiplying and dividing with fractions.</p> <p>May Number Corner focuses on various fifth grade skills. The workout Calendar Grid, students practice locating points on a coordinate grid. In Calendar Collector, students work with customary units of liquid volume measure. Computational Fluency and Problem Strings will focus on computation with fractions, and Solving Problems will focus on reasoning and solving backward to find a solution.</p>
Technology Enhancements	<p>MLC Apps</p> <p>Family Unit 7 Overview</p> <p>Family Unit 7 Overview, Spanish</p> <p>Math At Home</p>
Assessments	<p>Work Places:</p> <ul style="list-style-type: none"> ● 7A Roll Five ● 7B Quotients Race to One Hundred <p>Unit Assessments:</p> <ul style="list-style-type: none"> ● Checkpoints <ul style="list-style-type: none"> ○ Powers of Ten ○ Division ○ Fraction Division ● Work Samples <ul style="list-style-type: none"> ○ Division Problems Work ● (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"> • 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	<u>Relevant Standards:</u> (Bold Priority Standards) 5.OA.1, 5.NBT.2, 5.NBT.6, 5.NBT.7, 5.NF.3, 5.NF.4a, 5.NF.7a, 5.NF.7b, 5.NF.7c <u>Standards of Mathematical Practice:</u> 5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.MP.8

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UNIT 8: Solar Design

Pacing:
20 +2 days

Description	This unit focuses on building scale model houses that incorporate solar energy features.
Essential Questions	<ul style="list-style-type: none"> How do I collect, graph and analyze data? How do individual communities protect the Earth's resources and environment?
Learning Objectives	<p>Module 1: Investigating Solar Energy</p> <p><input type="checkbox"/> Students learn about solar energy, and how to read a thermometer in Fahrenheit and Celsius Scales.</p> <p>Module 2: Investigating Passive Solar Design</p> <p><input type="checkbox"/> Students learn about the features of passive solar design including thermal storage, how seasons and window placement can affect solar energy, and determine which insulation materials are most cost effective and useful.</p> <p>Module 3: Designing Solar Homes</p> <p><input type="checkbox"/> Students use their data analysis to determine which insulators proved most efficient in their designs.</p> <p>Module 4: Finishing Our Models</p> <p><input type="checkbox"/> Students continue to test their houses and analyze their data to determine which insulators proved most efficient in their designs. Students complete and showcase their models.</p>
Vocabulary	<p>Unit Eight Vocabulary</p> <p>data, dimension, mean, rectangular prism, reflection scale, surface area, variable, volume</p>
Suggested Learning Activities	<p>Students build on their previous understandings of:</p> <ul style="list-style-type: none"> data collection and analysis use of appropriate measurement tools with precision measurement and conversions of different sized units

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	<ul style="list-style-type: none"> • use of the four operations to work with whole numbers, decimals and fractions • finding volume • graphing on the coordinate plane • science and engineering practices to define the problem, develop possible solutions, and plan/carry out fair tests to improve design <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"> • Add, subtract, multiply and divide multi-digit whole numbers, decimals, and fractions • Solve volume problems with decimals and fractions • Find equivalent ratios • Use unit rates to solve problems <p><u>Math Strategies & Models Used:</u></p> <p><u>Number Corner:</u> May Number Corner focuses on various fifth grade skills. The workout Calendar Grid, students practice locating points on a coordinate grid. In Calendar Collector, students work with customary units of liquid volume measure. Computational Fluency and Problem Strings will focus on computation with fractions, and Solving Problems will focus on reasoning and solving backward to find a solution.</p>
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"> • 7A Roll Five • 7B Quotients Race to One Hundred <p>Unit Assessments:</p> <ul style="list-style-type: none"> • Checkpoints <ul style="list-style-type: none"> o Powers of Ten o Division o Fraction Division • Work Samples <ul style="list-style-type: none"> o Division Problems Work • (Screener) Pre Assessment/ Post Assessment* <ul style="list-style-type: none"> o Pre/Post Assessment Reflection & Goal Setting <p>Interim Assessment</p>

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	<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	Relevant Standards: (Bold Priority Standards) 5.OA.1, 5.NBT.2, 5.NBT.6, 5.NBT.7, 5.NF.3, 5.NF.4a, 5.NF.7a, 5.NF.7b, 5.NF.7c Standards of Mathematical Practice: 5.MP1, 5.MP.2, 5.MP.3, 5.MP.4, 5.MP.5, 5.MP.6, 5.MP.7, 5.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 3-6](#)

[Achieve the Core Implementing Standards for Mathematical Practices](#)

[Units 1-7 I Can Statements](#)

[Grade 5 Exit Tickets](#)

[Grade 5 Digital Math Journal](#)

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

Grade Level Drive

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](#)

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Bridges Resources

- [Scope & Sequence](#)
- [Grade 5 Vocabulary](#)
- [Grade 5 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](#)

Additional Resources:

- [7 Effective Math Practices](#)
- [Number Corner Digital Months](#)

Grade level drive