



# Grade 3 Math Curriculum

## **Grade 3 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.

## **Standards for Mathematical Practice**

## Grade 3 Math Curriculum

<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>Reasoning and explaining</div> <div>Modeling and using tools</div> <div>Seeing structure and generalizing</div> <div>Overarching habits of mind of a productive mathematical thinker.</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 &amp; 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 3 Domains, Clusters and Critical Areas of Focus

## Grade 3 Math Curriculum

Domains	Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations: Fractions	Measurement & Data	Geometry
Clusters	<p>Represent and solve problems involving multiplication and division.</p> <p>Understand properties of multiplication and the relationship between multiplication and division.</p> <p>Multiply and divide within 100.</p> <p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p>	<p>Use place value understanding and properties of operations to perform multi-digit arithmetic.</p>	<p>Develop an understanding of fractions as numbers.</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.</p> <p>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and measures.</p>	<p>Reason with shapes and their attributes.</p>

## Grade 3 Math Curriculum

**In Grade 3, instructional time should focus on four critical areas:** (note multiplication, division, and fractions key developments)

**1. Developing understanding of multiplication and division and strategies for multiplication and division within 100**

- Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

**2. Developing understanding of fractions, especially unit fractions (fractions with numerator 1)**

- Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example,  $\frac{1}{2}$  of the paint in a small bucket could be less paint than  $\frac{1}{3}$  of the paint in a larger bucket; but  $\frac{1}{3}$  of a ribbon is longer than  $\frac{1}{5}$  of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

**3. Developing understanding of the structure of rectangular arrays and of area**

- Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same-size units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.

**4. Describing and analyzing two-dimensional shapes**

- Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole

## Grade 3 Math Curriculum

# Table of Contents

<b>UNIT 1: Addition &amp; Subtraction Patterns</b>	<b>7</b>
<b>UNIT 2: Introduction to Multiplication</b>	<b>11</b>
<b>UNIT 3: Multi-Digit Addition &amp; Subtraction</b>	<b>15</b>
<b>UNIT 4: Measurement &amp; Fractions</b>	<b>19</b>
<b>UNIT 5: Multiplication, Division &amp; Area</b>	<b>23</b>
<b>UNIT 6: Geometry</b>	<b>27</b>
<b>UNIT 7: Extending Multiplication &amp; Fractions</b>	<b>31</b>
<b>UNIT 8: Bridge Design and Construction: Data Collection &amp; Analysis</b>	<b>35</b>
<b>Appendix</b>	<b>38</b>

## Grade 3 Math Curriculum

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex-grow: 1; text-align: center;"> <b>UNIT 1: Addition &amp; Subtraction Patterns</b> </div> <div style="text-align: right;"> <b>Pacing:</b>  <b>20 +2 days</b> </div> </div>	
<b>Description</b>	<b>This unit focuses on patterns in addition and subtraction facts, the pattern of adding 10s, measuring, and problem solving.</b>
<b>Essential Questions</b>	<ul style="list-style-type: none"> <li>What does a math community of learners look and sound like?</li> <li>What models and strategies can help add and subtract numbers to 20?</li> <li>What models and strategies can help us add and subtract double digit numbers?</li> </ul>
<b>Learning Objectives</b>	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Community Building &amp; Addition Facts to Twenty (Work Place 1A Make the Sum)</b></p> <p><input type="checkbox"/> <i>Students build People Glyphs to share their preferred learning styles in math. They sort and classify glyphs and collect data in a bar graph. In Sessions 4 and 5, students complete the addition table to review basic addition facts and discuss patterns among them.</i></p> <p><b>Module 2: Subtraction Facts to Twenty (Work Places 1B Target Twenty, 1C Blast Off to Space, 1D Subtraction Bingo)</b></p> <p><input type="checkbox"/> <i>Students review and explore subtraction facts. Students use the subtraction table to identify types of facts and to learn and revisit effective and efficient strategies for these facts.</i></p> <p><b>Module 3: Double-Digit Addition (Work Place 1E Carrot Grab)</b></p> <p><input type="checkbox"/> <i>The module begins with measurement context in which students search out objects that have certain lengths. The class uses these to build the open number line and then uses the open number line to model students' strategies to add double-digit length measurements. The class has their first math forum to encourage students toward more efficient and sophisticated addition strategies. Students learn a Work Place, Carrot Grab, that helps them with place-value patterns and the addition strategy of getting to a friendly number.</i></p> <p><b>Module 4: Story Problems &amp; Strategies (Work Places 1G Target One Hundred, 1H Anything But Five)</b></p> <p><input type="checkbox"/> <i>In the first four sessions of this module, students solve story problems that involve adding and subtracting 2-digit numbers. They spend time discussing their strategies and modeling them with the open number line, splitting diagrams, and equations. The last session features multi-step problems involving both addition and subtraction. Students model their strategies with equations but also write equations to represent the problem situation.</i></p>

## Grade 3 Math Curriculum

<b>Vocabulary</b>	<p><b>Unit One Vocabulary</b></p> <p><i>Italicized identifies those terms for which Resource Cards are available.</i></p> <p><b><i>difference</i></b>, number rack, <b><i>sum or total</i></b>, <b><i>commutative property of addition</i></b>, <b><i>even number</i></b>, <b><i>odd number</i></b>, <b><i>associative property of addition</i></b>, <b><i>centimeter (cm)</i></b>, <b><i>inch (in)</i></b>, <b><i>measure</i></b>, <b><i>measuring tape</i></b>, <b><i>ruler</i></b>, friendly number, math forum, <b><i>number line</i></b>, problem string, tens</p>
<b>Suggested Learning Activities</b>	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Second grade skills and concepts including number relationships, operations, facts to twenty, adding 2 to any 2 or 3-digit numbers</li> <li>• Number relationships and their understanding of the operations to further develop their multi-digit addition and subtraction strategies.</li> <li>• Strategies and demonstration of understanding of standard algorithms.</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Fluently use number relationships and their understanding of the operations to further develop their multi-digit addition and subtraction strategies to the Community Building &amp; Addition Facts to Twenty place value of 1,000.</li> <li>• Persevere and precisely solve multi-step story problems using a variety of different operations and strategies.</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Number Rack; <a href="#">Number Rack App</a></p> <p><a href="#">Addition Strategy Posters</a></p> <p><a href="#">Subtraction Strategy Posters</a></p> <p>Base Ten Blocks: <a href="#">Number Pieces App</a></p> <p>Open number lines; <a href="#">Number Line App</a></p> <p><b><u>Number Corner:</u></b></p> <p><b>September Number Corner</b> focuses on key multiplication concepts. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on review of place value through 1,000 and strategies for adding two and three</p>



## Grade 3 Math Curriculum

	<p>digit numbers.</p> <p><b>October Number Corner</b> focuses on multiplication and efficient strategies for adding and subtracting . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on introducing measurement of liquid volume in metric units, fractions and a host of geometry terms and concepts.</p>
Technology Enhancements	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 1 Overview</a></p> <p><a href="#">Family Unit 1 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>• 1A Make the Sum</li> <li>• 1B Target 20</li> <li>• 1C Blast Off to Space</li> <li>• 1D Subtraction Bingo</li> <li>• 1E Carrot Grab</li> <li>• 1F Rabbit Tracks</li> <li>• 1G Target 100</li> <li>• 1H Anything But Five</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>• Checkpoints <ul style="list-style-type: none"> <li>o Addition &amp; Subtraction</li> </ul> </li> <li>• (Screener) Pre Assessment/Post Assessment <ul style="list-style-type: none"> <li>o Pre/Post Assessment Reflection &amp; Goal Setting</li> </ul> </li> <li>• CGA (Comprehensive Growth Assessment, Fall)</li> </ul> <p><b>SBAC Preparation</b></p> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"> <li>• OA</li> <li>• NBT</li> </ul>

## Grade 3 Math Curriculum

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	<b>Relevant Standards: (Bold Priority Standards)</b> 2.OA.1, 2.OA.2, 2.NBT.2, 2.MD.5, <b>3.OA.9</b> , 3.OA, <b>3.NBT.2</b> <b>Standards of Mathematical Practice:</b> 3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8

## Grade 3 Math Curriculum

UNIT 2: Introduction to Multiplication		Pacing: 20 +2 days
Description	This unit focuses on introducing multiplication by immersing students in a wide variety of multiplicative situations.	
Essential Questions	<ul style="list-style-type: none"> <li>• How can I use the structure of arrays to solve multiplication problems?</li> <li>• How can I use cube trains, paper strips, and number line models to solve multiplication problems?</li> <li>• How can I model data with equations?</li> </ul>	
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Multiplication in Context (Work Place 2A Loops and Groups)</b></p> <p><input type="checkbox"/> <i>Students investigate situation designed to elicit key ideas and strategies that build a foundation for a deep understanding of multiplication. Students examine various arrays (in a Pet Store) that facilitate the use of repeated addition and skip counting and other multiplicative strategies such as doubling. Students use stamps to determine the value of whole sets with efficiency. They explore a seascape (a coral reef habitat) in which they use a clownfish as a basic unit of measure to find the lengths and heights of various other plants and animals. Students begin to develop strategies beyond repeated addition, including doubling, proportional relationships and partial products.</i></p> <p><b>Module 2: Multiplying with Number Lines and Arrays (Work Places 2B Frog Jump Multiplication and 2C Cover Up)</b></p> <p><input type="checkbox"/> <i>Students make cube trains and paper strips to show the multiples of 2-10. Students solve puzzles where they use relationships to place either a multiplication problem or a product on a number line. They continue to investigate arrays (as they help a washer count window panes). In Sessions 3 and 4, students explore doubling, using partial products and making use of 5s and 10s facts. In the final session, they move from the discrete array structure of the paned windows to a contiguous array of mailboxes.</i></p> <p><b>Module 3: Ratio Tables and the Multiplication Tables (Work Place 2D Doubles help)</b></p> <p><input type="checkbox"/> <i>Students solve multiplication story problems and generate a list of multiplication strategies that they have learned so far. In Session 2, they begin to explore the ratio table, a model and tool that invites them to explore proportional thinking. In Sessions 3 and 4, they</i></p>	

## Grade 3 Math Curriculum

	<p><i>identify and label types of multiplication facts into a Multiplication Table.</i></p> <p><b>Module 4: Story Problems with Graphs and Multiple Operations</b></p> <p><input type="checkbox"/> <i>Students generate and organize data into tables, pictures graphs, bar graphs and line plots. They compare features and benefits of the different formats. They also begin analyzing and comparing data on various types of graphs.</i></p>
Vocabulary	<p><b><u>Unit Two Vocabulary</u></b></p> <p><i>Italicized identifies those terms for which Resource Cards are available.</i></p> <p><b><i>Columns, groups of, rows, equation, factor, measuring strip, multiple, product, multiple, commutative property of multiplication, variable, array, price per pound, times 10, bar graph, picture graph, table</i></b></p>
Suggested Learning Activities	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Building a transition from additive to multiplicative reasoning.</li> <li>• Solving two-step story problems using addition, subtraction and multiplication</li> <li>• Making a scaled pictograph and scaled bar graph to represent a data set with several categories</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Develop strategies to support students' algebraic reasoning</li> <li>• Solve multiplication story problems with products to 100 involving equal groups and arrays</li> <li>• Use and explain multiplicative strategies to demonstrate an understanding of multiplication</li> <li>• Multiply using the commutative property</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Property Posters (zero, identity, commutative, distributive)</p> <p>One-by-one counting</p> <p>Additive strategies</p> <p>Multiplicative strategies <a href="#">Posters</a></p>

## Grade 3 Math Curriculum

	<p>Arrays</p> <p>Number lines <a href="#">Number line app</a></p> <p>Ratio Tables</p> <p><b><u>Number Corner:</u></b></p> <p><b>October Number Corner</b> focuses on multiplication and efficient strategies for adding and subtracting . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on introducing measurement of liquid volume in metric units, fractions and a host of geometry terms and concepts.</p> <p><b>November Number Corner</b> focuses on multiplication. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on areas and arrays as they look for patterns and relationships. They will begin exploring fractions and solving problems with a letter for unknown quantities.</p>
Technology Enhancements	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 2 Overview</a></p> <p><a href="#">Family Unit 2 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>● 2A Loops and Groups</li> <li>● 2B Frog Jump Multiplication</li> <li>● 2C Cover Up</li> <li>● 2D Doubles Help</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>● Checkpoints <ul style="list-style-type: none"> <li>○ Multiplication</li> </ul> </li> <li>● (Screener) Pre Assessment/Post Assessment* <ul style="list-style-type: none"> <li>○ Pre/Post Assessment Reflection &amp; Goal Setting</li> </ul> </li> </ul>

## Grade 3 Math Curriculum

	<b>SBAC Preparation Interim Assessment</b> <ul style="list-style-type: none"> <li>• OA</li> <li>• MD</li> </ul>	
<b>Alignments</b>	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	<b>Relevant Standards: (Bold Priority Standards)</b>  <b>3.OA.1, 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.6, 3.OA.7, 3.OA.8, 3.OA.9, 3.MD.3</b>  <b>Standards of Mathematical Practice:</b>  3.MP.1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8

## Grade 3 Math Curriculum

<div> UNIT 3: Multi-Digit Addition &amp; Subtraction <div>Pacing: 20 +5 days</div> </div>	
Description	Students will review and extend their thinking about place value, multi-digit addition and subtraction, and problem solving.
Essential Questions	<ul style="list-style-type: none"> <li>Why is it helpful to round or estimate before solving for an exact answer?</li> <li>What strategies can be used to efficiently add multi-digit numbers?</li> <li>What strategies can be used to efficiently subtract multi-digit numbers?</li> </ul>
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Rounding &amp; Multi-Digit Addition (Work Places 3A Round All Tens, 3B Round &amp; Add Tens, 3C Round All Hundreds)</b></p> <p><input type="checkbox"/> <i>Students are introduced to the concept of rounding 2-and 3- digit numbers to the nearest ten or the nearest hundred, and discover that rounding can help them approximate solutions to problems as well as determine the reasonableness of their answers.</i></p> <p><b>Module 2: Multi-Digit Subtraction</b></p> <p><input type="checkbox"/> <i>Students use problem strings, investigations, and forums to explore and analyze different subtraction strategies focusing on finding the difference and removal. Students find they can apply much of what they learned about addition number line strategies to subtraction on the number line. Emphasis is on the constant difference strategy, which fosters flexibility and efficiency.</i></p> <p><b>Module 3: Estimating to Add &amp; Subtract (Work Place 3D Round &amp; Add Hundreds)</b></p> <p><input type="checkbox"/> <i>Students round, add and subtract, and practice and use estimating skills to approximate solutions to problems and determine the reasonableness of their answers. Students practice rounding 3-digit numbers to the nearest hundred and comparing the sum of the rounded numbers to the sum of the actual numbers. Students also collect data from a table which they use for rounding, estimating, adding, and subtracting.</i></p> <p><b>Module 4: Module 4 Exploring the Algorithms for Addition &amp; Subtraction</b></p> <p><input type="checkbox"/> <i>Students are introduced to the standard algorithms for addition and subtraction. Students compare the standard algorithms with other methods and strategies they have developed and learned and consider when each is best deployed. Students are not expected to master these algorithms until fourth grade.</i></p>

## Grade 3 Math Curriculum

<b>Vocabulary</b>	<p><b><u>Unit Three Vocabulary</u></b></p> <p><i>Italicized identifies those terms for which Resource Cards are available.</i></p> <p>approximate, <b><i>estimate</i></b>, nearest ten, <b><i>rounding</i></b>, strategy, landmark number, nearest hundred, addend, <b><i>sum or total</i></b>, addend, <b><i>difference</i></b>, minuend, remove/removal, strategy, subtrahend, <b><i>expanded form</i></b>, minimal collection, thousand, <b><i>algorithm</i></b></p>
<b>Suggested Learning Activities</b>	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Solving one-step story problems using addition and subtraction.</li> <li>• Fluently using number relationships and their understanding of the operations to further develop their multi-digit addition and subtraction strategies to the place value of 1,000.</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Round whole numbers to the nearest ten and hundred.</li> <li>• Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add or subtract fluently with sums/minuends to 1,000.</li> <li>• Persevere and precisely solve multi-step story problems using a variety of different operations and strategies.</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Strategies for Multi-Digit Addition:</p> <ul style="list-style-type: none"> <li>• Place value splitting</li> <li>• Keeping one addend whole - add a friendly number</li> <li>• Keeping one addend whole - get to a friendly number</li> <li>• Give &amp; take (compensation)</li> <li>• Standard addition algorithm</li> </ul> <p>Strategies for Multi-Digit Subtraction:</p> <ul style="list-style-type: none"> <li>• Removal (take away)</li> <li>• Place value splitting</li> <li>• Finding the difference (distance)</li> <li>• Constant difference</li> </ul>



## Grade 3 Math Curriculum

	<ul style="list-style-type: none"> <li>Standard addition algorithm</li> </ul> <p>Base Ten Blocks: <a href="#">Number Pieces App</a></p> <p>Open number lines; <a href="#">Number Line App</a></p> <p><b><u>Number Corner:</u></b></p> <p><b>November Number Corner</b> focuses on multiplication. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on areas and arrays as they look for patterns and relationships. They will begin exploring fractions and solving problems with a letter for unknown quantities.</p> <p><b>December Number Corner</b> focuses on fractions, measuring mass and rounding to multiplication problems. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on students looking for patterns and developing mathematical reasoning.</p>
Technology Enhancements	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 3 Overview</a></p> <p><a href="#">Family Unit 3 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>3A Round Ball Tens</li> <li>3B Round &amp; Add Tens</li> <li>3C Round Ball Hundreds</li> <li>3D Round &amp; Add Hundreds</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>Checkpoints             <ul style="list-style-type: none"> <li>Rounding &amp; Multi-Digit Addition</li> <li>Three-Digit Addition and Subtraction</li> </ul> </li> <li>(Screener) Pre Assessment/ Post Assessment*             <ul style="list-style-type: none"> <li>Pre/Post Assessment Reflection &amp; Goal Setting</li> </ul> </li> </ul> <p><b>SBAC Preparation</b></p>

## Grade 3 Math Curriculum

	<b>Interim Assessment</b> <ul style="list-style-type: none"> <li>• OA</li> <li>• NBT</li> </ul>	
<b>Alignments</b>	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
	CCS	<b>Relevant Standards: (Bold Priority Standards)</b>  <b>3.OA.8</b> , 3.NBT.1, 3.NBT.2  <b>Standards of Mathematical Practice:</b>  3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8

## Grade 3 Math Curriculum

UNIT 4: Measurement & Fractions		Pacing: 20 +2 days
Description	This unit focuses on telling time to the nearest minute, solving elapsed time problems, comparing mass of different objects, and investigating relationships with unit fractions.	
Essential Questions	<ul style="list-style-type: none"> <li>• Why is being able to tell time and identify elapsed time important?</li> <li>• How can I use a pan balance scale as a tool to estimate, measure, and compare the masses of various objects?</li> <li>• What measurement(s) do I use to identify mass, liquid volume, and length?</li> <li>• How can I use a Number Line as a tool to identify equivalent fractions?</li> <li>• Why is a line plot an effective tool to display data?</li> </ul>	
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Measuring Time &amp; Mass (Work Place 4A Tic-Tac-Tock)</b></p> <p><input type="checkbox"/> <i>Students practice telling time and begin working with elapsed time. The Work Place, Tic-Tac-Tock reinforces these skills. Students also learn how to measure mass on a pan balance scale and then estimate, measure and compare the masses of various objects.</i></p> <p><b>Module 2: Measuring Volume &amp; Solving Measurement Story Problems (Work Places 4B Measurement Scavenger Hunt, 4C Target One Thousand)</b></p> <p><input type="checkbox"/> <i>Students continue their work with measurement, first investigating liquid volume and then a new Work Place. Sessions 3, 4, and 5 feature two sets of measurement- related story problems and two math forums. Students compare strategies for solving problems that necessitate identifying the operations needed, and in some cases require more than one step and one operation to solve.</i></p> <p><b>Module 3: Fractions as Fair Shares (Work Place 4D Hexagon Spin &amp; Fill)</b></p> <p><input type="checkbox"/> <i>Students begin their study of fractions (building on their work in first and second grade) and extend their thinking to include new models and concepts. They begin by folding paper rectangle “cookies” to share with varying numbers of people. They use the fractional portions to compare unit fractions and develop understandings about common fractions. Their work with the paper rectangles leads to a session and a new Work Place featuring pattern blocks. Next they investigate fractions as</i></p>	

## Grade 3 Math Curriculum

	<p><i>measures, exploring the fact that a unit fraction is <math>\frac{1}{b}</math> is the distance from 0 to <math>\frac{1}{b}</math>, and a common fraction <math>\frac{a}{b}</math> can be modeled on a number line by making a hops of <math>\frac{1}{b}</math>.</i></p> <p><b>Module 4: Fractions on a Line Plot</b></p> <p><input type="checkbox"/> Students work together with measurement, fractions, and data analysis to create paper beanstalks, measure them, and display length data on line plots.</p>
<b>Vocabulary</b>	<p><b><u>Unit Four Vocabulary</u></b></p> <p><b><i>Bold Italicized</i></b> identifies those terms for which Resource Cards are available.</p> <p>analog clock, benchmark, capacity, <b><i>centimeter (cm)</i></b>, common fractions, compare, <b><i>congruent, cup, customary system, data, denominator</i></b>, digital clock, distance, eighth/eighths, <b><i>equation</i></b>, equivalent, fair share, fourth/fourths, <b><i>fraction, gallon (gal.), gram(g)</i></b>, greatest, <b><i>half</i></b>, half-hour, halves, <b><i>height</i></b>, horizontal scale, hour (hr), <b><i>inch (in.)</i></b>, <b><i>kilogram (kg)</i></b>, least, length, less than, <b><i>line plot, liquid volume, liter (l)</i></b>, <b><i>mass</i></b>, measure, <b><i>meter (m)</i></b>, <b><i>metric system, milliliter (ml)</i></b>, <b><i>millimeter (mm)</i></b>, minute (min), more than, nearest half-inch (in.), nearest quarter-inch (in.), <b><i>numerator</i></b>, order, <b><i>ounce (oz.)</i></b>, pan balance scale, <b><i>pound (lb.)</i></b>, <b><i>quart (qt)</i></b>, referent, sixth/sixths, <b><i>sum or total, table</i></b>, third/thirds, time, timeline, <b><i>unit fraction, volume</i></b>, weight</p>
<b>Suggested Learning Activities</b>	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Write a whole number as a fraction and recognize fractions are equivalent to whole numbers.</li> <li>• Tell and write time to the nearest minute.</li> <li>• Generate data by measuring to the nearest half or fourth of an inch; make a line plot to show measurement data with a horizontal scale marked in half inches and quarter inches.</li> <li>• Partition shapes into parts with equal areas; express the area of each equal part of a whole as a unit fraction of the whole.</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Mastery of estimating and measuring mass in grams and kilograms, liquid volume in milliliters and liters; and solving story problems with mass and volume</li> <li>• Demonstrate understanding of unit fraction</li> <li>• Identify equivalent fractions by comparing sizes and locations on a number line</li> <li>• Recognize and generate equivalent fractions</li> <li>• Compare two fractions with the same denominator</li> <li>• Measure time in minute intervals and solve story problems involving time</li> <li>• Generate data by measuring to the nearest half or fourth of an inch; make a line plot to show measurement data with a</li> </ul>

## Grade 3 Math Curriculum

	<p>horizontal scale marked in half inches and quarter inches.</p> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Base Ten Area Pieces,            Multiplicative Strategies <a href="#">Posters</a>            Open Number lines <a href="#">Number line app</a>            Give &amp; Take Addition            Constant Difference for Subtraction</p> <p><b><u>Number Corner:</u></b></p> <p><b><u>December Number Corner</u></b> 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><b><u>January Number Corner</u></b> 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	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 4 Overview</a></p> <p><a href="#">Family Unit 4 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>● 4A Tic-Tac-Tock</li> <li>● 4B Measurement Scavenger Hunt</li> <li>● 4C Target One Thousand</li> <li>● 4D Hexagon Fill &amp; Fill</li> </ul>

## Grade 3 Math Curriculum

	<p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>• Unit 4 Checkpoints               <ul style="list-style-type: none"> <li>o Time</li> <li>o Measurement</li> </ul> </li> <li>• Unit 4 (Screener) Pre Assessment/ Post Assessment*               <ul style="list-style-type: none"> <li>o Pre/Post Assessment Reflection &amp; Goal Setting</li> </ul> </li> <li>• CGA (Comprehensive Growth Assessment, Winter)</li> </ul> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"> <li>• OA</li> <li>• NBT</li> <li>• NF</li> <li>• MD</li> </ul>	
<b>Alignments</b>	Textbook	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
	CCS	<p><b>Relevant Standards: (Bold Priority Standards)</b></p> <p><b>3.OA.2, 3.OA.3, 3.OA.8, 3.NBT.2, 3.NF.1, 3.NF.2, 3.NF.3, 3.MD.1, 3.MD.2</b></p> <p><b>Standards of Mathematical Practice:</b></p> <p>3.MP.1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8</p>

## Grade 3 Math Curriculum

UNIT 5: Multiplication, Division & Area		Pacing: 20 +5 days
Description	This unit focuses on developing the understanding of how division relates to multiplication.	
Essential Questions	<ul style="list-style-type: none"> <li>What is the relationship between multiplication and division?</li> <li>How can I find the area of squares or rectangles?</li> </ul>	
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Linking Multiplication and Division (Work Place 5A Solving Game Store Problems)</b></p> <p><input type="checkbox"/> <i>Students are formally introduced to division, working from what they already know about multiplication to understand division as the inverse operation, just as subtraction is the inverse of addition. Students work together to make a class chart about things that come in fours. In the second session, the teacher guides them in labeling the class chart with multiplication and division equations to link the two operations.</i></p> <p><b>Module 2: Multiplication and Division Families (Work Place 5B Scout Them Out)</b></p> <p><input type="checkbox"/> <i>Students continue to develop two different interpretations of division - sharing and grouping - by solving story problems that elicit one interpretation of the other, and then sharing and discussing their work as a class. Students are introduced to fact families.</i></p> <p><b>Module 3: Division Practice (Work Places 5C Line 'Em Up and 5D Division Capture)</b></p> <p><input type="checkbox"/> <i>Students continue to investigate two different interpretations of division - sharing and grouping - by solving story problems that elicit one interpretation of the other, and then sharing and discussing their work as a class. Students are introduced to two new division Work Places, Line 'Em Up and Division Capture. The first of these is designed to deepen students' understandings of the operation, while the second provides practice with basic division facts.</i></p> <p><b>Module 4: Introducing Area</b></p> <p><input type="checkbox"/> <i>Students come to understand that area is an attribute of plane figures such as rectangles and squares, and is measured in square units. Students first measure in nonstandard units, and then move into estimating and measuring area in customary units: square inches, square feet, and square yards. In sessions 4, and 5, they begin to investigate the link between area and multiplication,</i></p>	

## Grade 3 Math Curriculum

	discovering that the area of a rectangle can be efficiently calculated by multiplying its side lengths.
Vocabulary	<p><u>Unit Five Vocabulary</u></p> <p><b><i>Bold Italicized</i></b> identifies those terms for which Resource Cards are available.</p> <p>Area, array, dimension, divide, equal , equation, fact family, group, measure, multiply, rectangle, story problem, row, column, expression, share, estimate, reasonable answer,</p>
Suggested Learning Activities	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• How a square with the side length of 1 is called a “unit square” and has 1 square unit of area</li> <li>• Understand that unit squares can be used to measure the areas of other plane figures</li> <li>• A plane figure can be covered without gaps and figuring out the area is counting the number of square units that cover it.</li> <li>• Find the area of a rectangle by multiplying the side length</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Apply the area formula for rectangles.</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Equal Groups</p> <p>Rectangular Arrays</p> <p>Sharing, grouping and using unknown facts</p> <p><b><u>Number Corner:</u></b></p> <p><b>January Number Corner</b> focuses on continuing their understanding of fractions . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on collecting minutes and hours, multiplying by 5 and 10 and solving</p>



## Grade 3 Math Curriculum

	<p>multi-step story problems.</p> <p><b>February Number Corner</b> focuses on exploring geometry, measurement, fractions, multiplication, fact fluency, and problem solving with data and graphing . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will reinforce these concepts during the month.</p>	
Technology Enhancements	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 5 Overview</a></p> <p><a href="#">Family Unit 5 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>	
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>• 5A-Solving Game Store Problems</li> <li>• 5B-Scout them out</li> <li>• 5C-Line 'Em Up</li> <li>• 5D-Division Capture</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>• Checkpoints <ul style="list-style-type: none"> <li>o Multiplication &amp; Division</li> <li>o Division</li> </ul> </li> <li>• (Screener) Pre Assessment/ Post Assessment* <ul style="list-style-type: none"> <li>o Pre/Post Assessment Reflection &amp; Goal Setting</li> </ul> </li> </ul> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"> <li>• OA</li> <li>• MD</li> </ul>	
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	<b>Relevant Standards: (Bold Priority Standards)</b>

## Grade 3 Math Curriculum

		<b>3.OA.1,3.OA.3,3.OA.4,3.OA.6, 3.MD.5a, 3.MD.5b,3.MD.6,3.MD7a</b> <b>Standards of Mathematical Practice:</b> 3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8
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## Grade 3 Math Curriculum

### UNIT 6: Geometry

Pacing:  
20 +2 days

<b>Description</b>	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.
<b>Essential Questions</b>	<ul style="list-style-type: none"> <li>• How can polygons be explored in a variety of creative ways?</li> <li>• How can you build and form polygons and special quadrilaterals with the understanding that shared attributes belong to a larger category?</li> <li>• How can you combine geometry and measurement in order to measure the perimeters and areas of polygons?</li> <li>• How can you apply learning about quadrilaterals and area within the context of fractions?</li> </ul>
<b>Learning Objectives</b>	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Investigating Polygons (Work Place 6A Tangram Problems)</b></p> <p><input type="checkbox"/> <i>Students use examples and nonexamples to explore the attributes of quadrilaterals. Students create their own sets of tangram pieces to discuss congruence and similarity.</i></p> <p><b>Module 2: Quadrilaterals (Work Places 6B Geoboard Polygons)</b></p> <p><input type="checkbox"/> <i>Students build a variety of polygons out of toothpicks including squares, rectangles, and a variety of rhombuses. Students work up to multi-sided polygons having as many as 12 sides. In Work Place 6B, students create polygons to match a series of clues given from the geometric attributes. In Sessions 3, 4, and 5, they sort quadrilaterals and write quadrilateral riddles. In Session 6, students estimate and measure perimeters of five different quadrilaterals as a transition to a deeper look at perimeter and area.</i></p> <p><b>Module 3: Perimeter &amp; Area (Work Place 6C Guess My Quadrilateral, 6D Area or Perimeter)</b></p> <p><input type="checkbox"/> <i>Students investigate perimeter and area as related but different ways to measure polygons. Module 3 opens with a story about a little raccoon who invites 328 neighbors to lunch and must prepare seating arrangements. The story provides a context for students to design and model tables by using square-inch tiles together from various rectangles. Students discover it's possible to build different rectangles with a perimeter of 20 linear units, but each with a different area. They find that it's possible to build several different rectangles with an area of 24 square units, but each one has a different perimeter.</i></p>

## Grade 3 Math Curriculum

	<p><b>Module 4: Shapes &amp; Fractions</b></p> <p><input type="checkbox"/> <i>Shapes and area come together in the context of fractions as students find many different ways to divide the largest square on the geoboard into congruent and noncongruent halves, determine the fractional value of different regions on the geoboard when the largest square is assigned as an area of 1 square unit, and design their own geoboard quilt blocks.</i></p>
<p><b>Vocabulary</b></p>	<p><b>Unit Six Vocabulary</b></p> <p><i>Italicized identifies those terms for which Resource Cards are available.</i></p> <p><b>Acute angle, angle, area,</b> closed figure, <b>congruent, equation, foot (ft.),</b> length, <b>line of symmetry,</b> measurement, <b>meter (m), obtuse angle,</b> open figure, <b>parallel, perimeter, polygon, quadrilateral, rectangle, rhombus, right angle,</b> side, <b>square, symmetry, trapezoid,</b> attribute, <b>perpendicular, vertex or corner,</b> similar, tan, <b>hexagon,</b> irregular polygon, <b>pentagon,</b> regular polygon, <b>equilateral triangle,</b> centimeter(cm), <b>estimate, array, divide, multiply,</b> rectangular array, T-chart, width, <b>dimension,</b> length, square centimeter, <b>pattern,</b> side length, <b>fraction, half, denominator, equivalent fractions, numerator, rotation</b></p>
<p><b>Suggested Learning Activities</b></p>	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding that a square with a side length of unit 1 is known as a “unit square” and can be used to measure areas of other plane figures.</li> <li>• Understanding that a plane figure can be covered without gaps or overlaps by “n” unit squares and will have an area of “n” square units.</li> <li>• Find the area of a rectangle with whole-number side lengths by tiling it, see that area remains the same as if found by multiplying the side lengths.</li> <li>• Identify rhombuses, rectangles, and squares as quadrilaterals.</li> <li>• Identify shared attributes of shapes into different categories.</li> <li>• Partition shapes into parts with equal areas and express the area of each equal part of a whole as a unit fraction of a whole.</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Find the area of a rectangle by multiplying its side lengths, representing the product of two numbers as the area of a rectangle with</li> </ul>

## Grade 3 Math Curriculum

	<p>side lengths that are equal to those two numbers.</p> <ul style="list-style-type: none"> <li>• Find the area of a figure that can be decomposed into non-overlapping rectangles, and solve to those two numbers</li> <li>• Identify rhombuses, rectangles, and squares as quadrilaterals</li> <li>• Identify shared attributes of shapes in different categories</li> <li>• Group shapes in different categories according to shared attributes that define a broader category.</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p><a href="#">Geoboards</a></p> <p><a href="#">Pattern Shapes</a></p> <p><a href="#">The 329th Friend</a> by Marjorie Weinman Sharmat</p> <p>Red linear units</p> <p>Colored tiles</p> <p><b><u>Number Corner:</u></b></p> <p><b>February Number Corner</b> focuses on exploring geometry, measurement, fractions, multiplication, fact fluency, and problem solving with data and graphing . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will reinforce these concepts during the month.</p> <p><b>March Number Corner</b> 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, Number Line, and Solving Problems will renew and extend proficiency with these skills and concepts, while also introducing new concepts such as improper fractions.</p>
<p><b>Technology Enhancements</b></p>	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 6 Overview</a></p> <p><a href="#">Family Unit 6 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
<p><b>Assessments</b></p>	<p><b>Work Places:</b></p>

## Grade 3 Math Curriculum

	<ul style="list-style-type: none"><li>• 6A Tangram Polygons</li><li>• 6B Geoboard Polygons</li><li>• 6C Guess My Quadrilateral</li><li>• 6D Area or Perimeter</li></ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"><li>• Checkpoints<ul style="list-style-type: none"><li>o Quadrilaterals</li></ul></li><li>• (Screener) Pre Assessment/ Post Assessment*<ul style="list-style-type: none"><li>o Pre/Post Assessment Reflection &amp; Goal Setting</li></ul></li></ul> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"><li>• <b>MD</b></li><li>• <b>G</b></li></ul>	
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><b>Relevant Standards: (Bold Priority Standards)</b></p> <p><b>3.MD, 3.MD.5a, MD.5b, 3.MD.7a, 3.MD7b, 3.MD.7d, 3.MD.8, 3.G.1, 3.G.2</b></p> <p><b>Standards of Mathematical Practice:</b></p> <p>3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8</p>

## Grade 3 Math Curriculum

UNIT 7: Extending Multiplication & Fractions		Pacing: 20 +2 days
Description	This unit provides a review of material covered earlier in the year, as well as opportunities to extend skills and concepts into work with larger numbers and bigger ideas, including multiplying by 10, building and sketching 1-digit by 2-digit multiplication combinations, using linear and area models and collecting, representing and interpreting data.	
Essential Questions	<ul style="list-style-type: none"> <li>• What strategies can I use to solve larger numbers (x 11, x12)?</li> <li>• How can I represent and compare fractions?</li> </ul>	
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Multiplication Beyond the Basics</b></p> <p><input type="checkbox"/> <i>This is the first of two modules designed to solidify students' understandings of multiplication and extend their thinking beyond the basic facts into 1-by 2-digit multiplication. After reviewing the use of equations to represent two-step story problems that involve multiplication, students explore strategies for multiplying single 11, and then by 12. The last session in this module serves as a bridge into the second module, as students investigate multiplication of single digits by multiples of 10.</i></p> <p><b>Module 2: One-by-Two Digit Multiplication</b></p> <p><input type="checkbox"/> <i>Students continue their work with multiplication as they explore and discuss by 1-by2- digit arrays and add to their collection of multiplication strategies. Problem strings, activities, class discussions, and a poster project all help students develop understanding with multiplying single digits by multiples of 10, partial products, the associative property, and the distributive property as they model and solve larger multiplication problems.</i></p> <p><b>Module 3: Fractions as Parts of a Whole &amp; Parts of a Set (Work Place 7A Dozens of Eggs)</b></p> <p><input type="checkbox"/> <i>Module 3 returns to fractions. It introduces new easy to model, compare and generate equivalent fractions including a 12 inch ruler, a 12-foot long strip of adding machine tape, and tiles in an egg carton. Students work with halves, thirds, fourths, sixths and twelfths in a variety of investigations and a new Work Place.</i></p> <p><b>Module 4: Fractions at Work (Work Place 7B Racing Fractions)</b></p>	

## Grade 3 Math Curriculum

	<input type="checkbox"/> <i>Students apply their knowledge of fractions in a new number line game, and also with division, data collection, representation and analysis.</i>
Vocabulary	<p><b>Unit Seven Vocabulary</b></p> <p><i>Italicized identifies those terms for which Resource Cards are available.</i></p> <p><b><i>divide, equation, estimate, fraction, multiply, number line</i></b>, represent, unknown, two-step story problem, unknown quantity, digit, <b><i>multiple, pattern</i></b>, value, array, <b><i>dimension, factor</i></b>, partial products, <b><i>product, associative property of multiplication, expression, parentheses, denominator</i></b>, dozen, <b><i>equal</i></b>, feet, fourth, <b><i>fraction, half, numerator, partition</i></b>, sixth, third, twelfth, <b><i>unit fraction, equivalent fractions, foot (ft)</i></b>, addition, eighth, whole, <b><i>divide</i></b>, equally, equivalent, evenly, <b><i>pattern</i></b>, share, category, circle graph, <b><i>data</i></b>, legend, sample group, subgroup, survey, <b><i>impossible, likely, line plot, mode</i></b>, possible, <b><i>probability</i></b>, sample/sharing, unlikely, <b><i>number line</i></b>, represent</p>
Suggested Learning Activities	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Fluently multiplying products to 100 using strategies</li> <li>• What fractions are, how they differ from whole numbers, how big they are, and how they relate to one another</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Multiply using the commutative, associative, and distributive properties</li> <li>• Solve two-step story problems using addition, subtraction, multiplication and division</li> <li>• Write equations with a letter standing for the unknown quantity to represent two-step story problems</li> <li>• Assess the reasonableness of answers to story problems using mental computation rounding, and other estimation strategies</li> <li>• Multiply whole numbers from 1 to 9 by multiples of 10 from 10 to 90 using strategies based on place value and properties of operations</li> <li>• Demonstrate the understanding of a unit fraction and place fractions on the correct position on a number line.</li> <li>• Identify equivalent fractions and generate simple equivalent fractions and explain why they are equivalent</li> <li>• Compare fractions</li> <li>• Find the area of a rectangle by multiplying its side lengths; represent the product of two numbers as the area of a rectangle with side lengths equal to those numbers</li> <li>• Use the area model for multiplication to illustrate the distributive property</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p>



## Grade 3 Math Curriculum

	<p>Array Model (Multiplication)</p> <p>The 12-inch Ruler (Fractions)</p> <p>Egg Carton Model (Fractions)</p> <p>Pizzas &amp; Circle Graphs (Fractions): <a href="#">Fractions App</a></p> <p>Base Ten Blocks: <a href="#">Number Pieces App</a></p> <p><b><u>Number Corner:</u></b></p> <p><b>March Number Corner</b> 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, Number Line, and Solving Problems will renew and extend proficiency with these skills and concepts, while also introducing new concepts such as improper fractions.</p> <p><b>April Number Corner</b> focuses on fractions, multiplication and division. The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on helping students develop strategies and understanding through the use of models, discussion, hands-on activities, games, and reflection and problem solving.</p> <p><b>May Number Corner</b> focuses on extending many key third grade skills and concepts . The workouts Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems will focus on fractions, multiplication facts and properties.</p>
Technology Enhancements	<p><a href="#">MLC Apps</a></p> <p><a href="#">Family Unit 7 Overview</a></p> <p><a href="#">Math Unit 7 Overview, Spanish</a></p> <p><a href="#">Math At Home</a></p>
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>● 7A Dozens of Eggs</li> <li>● 7B Racing Fractions</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>● Checkpoints <ul style="list-style-type: none"> <li>○ Multiplication &amp; Division</li> </ul> </li> </ul>

## Grade 3 Math Curriculum

	<ul style="list-style-type: none"><li>o Fractions</li><li>• (Screener) Pre Assessment/ Post Assessment*<ul style="list-style-type: none"><li>o Pre/Post Assessment Reflection &amp; Goal Setting</li></ul></li></ul> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"><li>• OA</li><li>• NBT</li><li>• NF</li><li>• MD</li><li>• G</li></ul>	
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><b>Relevant Standards: (Bold Priority Standards)</b></p> <p><b>3.OA.1, 3.OA.5, 3.OA.7, 3.OA.8, 3.NBT.3, 3.NF.1, 3.NF.2, 2.NF.2a, 2.NF.2b, 3.NF.3a, 3.NF.3b, 3.NF.3c, 3.NF.3d, 3.NF.3d, 3.MD.7a, 3.MD.7b, 3.MD.7c, 3.G.2</b></p> <p><b>Standards of Mathematical Practice:</b></p> <p>3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8</p>

## Grade 3 Math Curriculum

<div> UNIT 8: Bridge Design and Construction: Data Collection &amp; Analysis <div>Pacing: 20 +2 days</div> </div>	
Description	Students learn about different kinds of bridges by reading nonfiction, looking at pictures, doing research, and building their own model bridges. This unit integrates mathematics and science with a primary focus on designing and building model bridges, which are then tested in systematic ways to collect data. Students graph and analyze the data, finding the range and mean, to make conjectures and draw conclusions about effective bridge design and con
Essential Questions	<ul style="list-style-type: none"> <li>• How do structure and forces affect bridge design?</li> <li>• How can a model demonstrate the effectiveness of a bridge?</li> <li>• How can data from line plots and scatter plots help us analyze bridge designs?</li> <li>• What materials can we use to build a successful longest and strongest bridge?</li> </ul>
Learning Objectives	<p><b>Teacher Note:</b> <i>Estimation is a skill that deepens number sense. Remember to prompt students to estimate before solving problems.</i></p> <p><b>Module 1: Module 1 Introducing Bridges (Work Place 8A Weight Lifting, 8B Wacky Discus)</b></p> <p><input type="checkbox"/> <i>Students learn background information about the different kinds of structures and forces at play in various bridge designs. They read nonfiction text, collect pictures from a variety of sources, and make charts to study the first two basic kinds of bridges: beam and arch. Students use their bodies to investigate how structures balance themselves and support weight. They also build a variety of models to explore how beam and arch bridges work, experimenting with different shapes and areas. After building their models, the class tests their designs, collects data, creates a bar graph and analyzes the results.</i></p> <p><b>Module 2: Investigating Structures in Bridges (Work Places 8C Speed Skating, 8D Curling)</b></p> <p><input type="checkbox"/> <i>Students use a variety of models to explore how suspension bridges work, using liquid volume to test the load limits. Students collect data, create a line plot, and analyze the results. In Session 4, students sort images of bridges by type, create a class picture graph, and use the data independently to create their own scaled bar graph. In Session 5, students use their geometry skills to sort pictures of bridges by shapes and features and then guess each others' categories.</i></p> <p><b>Module 3: Planning, Building &amp; Analyzing Bridges</b></p> <p><input type="checkbox"/> <i>Students synthesize what they've learned about bridges so far by planning, then building two bridges, focusing first on strength and then on length (span). They collect data on their bridges, help the teacher create line plots and a scatter plot, and analyze</i></p>

## Grade 3 Math Curriculum

	<p><i>the results. Students reflect on class data to make conjectures about successful bridge designs and materials.</i></p> <p><b>Module 4: Demonstrating Our Learning About Bridges</b></p> <p><input type="checkbox"/> <i>Using the content and skills from the prior three modules, student teams build the longest, strongest bridge model they can. Teams measure and test their bridges, assess their work, and explain the challenges they faced and how they overcame them. Students independently draw a detailed sketch of their bridges, identify shapes they used in the construction, and reflect on the building process. The class analyzes the data and determines whether the average load limit and span length increased over the previous bridge designs.</i></p>
<b>Vocabulary</b>	<p><b><u>Unit Eight Vocabulary</u></b>  <i>Italicized bold identifies those terms for which Resource Cards are available.</i></p>
<b>Suggested Learning Activities</b>	<p><b>Students build on their previous understandings of:</b></p> <ul style="list-style-type: none"> <li>• Second grade skills and concepts including number relationships, operations, facts to twenty, adding 2 to any 2 or 3-digit numbers</li> <li>• Number relationships and their understanding of the operations to further develop their multi-digit addition and subtraction strategies.</li> <li>• Strategies and demonstration of understanding of standard algorithms.</li> </ul> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>• Fluently use number relationships and their understanding of the operations to further develop their multi-digit addition and subtraction strategies to the place value of 1,000.</li> <li>• Persevere and precisely solve multi-step story problems using a variety of different operations and strategies.</li> </ul> <p><b><u>Math Strategies &amp; Models Used:</u></b></p> <p>Students experiment with bridge designs; discussion/observation regarding use of different materials and designs to build bridges.</p> <p><b><u>Number Corner:</u></b></p> <p><b>May Number Corner</b> focuses on extending many key third grade skills and concepts . The workouts Calendar Grid, Calendar Collector,</p>

## Grade 3 Math Curriculum

	Computational Fluency, Number Line, and Solving Problems will focus on fractions, multiplication facts and properties.	
Technology Enhancements	<a href="#">MLC Apps</a> <a href="#">Family Unit 8 Overview</a> <a href="#">Family Unit 8 Overview, Spanish</a> <a href="#">Math At Home</a>	
Assessments	<p><b>Work Places:</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><b>Unit Assessments:</b></p> <ul style="list-style-type: none"> <li>CGA (Comprehensive Growth Assessment, Spring)</li> </ul> <p><b>Interim Assessment</b></p> <ul style="list-style-type: none"> <li>NF</li> <li>MD</li> <li>G</li> </ul>	
Alignments	Textbook	Bridges in Mathematics Teachers Guide, Unit 8 Bridges in Mathematics Assessment Guide Bridges in Mathematics Intervention Bridges in Mathematics Number Corner Student Book, Student Book, Home Connections Book
	CCS	<p><b>Relevant Standards: (Bold Priority Standards)</b></p> <p><b>3.NF.1, 3.MD.1, 3.MD.2, 3.MD.3, 3.MD.4, 3.MD.6, 3.MD.7, 3.MD.8, 3.G.1, 3.G.2</b></p> <p><b>Standards of Mathematical Practice:</b></p> <p>3.MP1, 3.MP.2, 3.MP.3, 3.MP.4, 3.MP.5, 3.MP.6, 3.MP.7, 3.MP.8</p>

## Grade 3 Math Curriculum

### 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 2-5](#)

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

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

[Digital Math Journal](#)

[Exit Unit 7 Extending Multiplication & Fractions](#)

[Unit 7 Partial Products](#)

[Unit 7 More Partial Products](#)

[Unit 7 The Associative Property Tickets \(created from Pre-Assessment\)](#)

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

Grade Level Drive

## Grade 3 Math Curriculum

### 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 3 Vocabulary](#)
- [Grade 3 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:

- [Student Notebook and Journal Pages](#)

## **Grade 3 Math Curriculum**