



Mathematical Practices	Vocabulary
<ul style="list-style-type: none"> <li><input type="checkbox"/> Make sense of problems and persevere in solving them.</li> <li><input type="checkbox"/> Reason abstractly and quantitatively.</li> <li><input type="checkbox"/> Construct viable arguments and critique the reasoning of others.</li> <li><input type="checkbox"/> Model with mathematics.</li> <li><input type="checkbox"/> Use appropriate tools strategically.</li> <li><input type="checkbox"/> Attend to precision.</li> <li><input type="checkbox"/> Look for and make use of structure.</li> <li><input type="checkbox"/> Look for and express regularity in repeated reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>Distributive Property</li> <li>Estimate</li> <li>Expanded form</li> <li>Factor</li> <li>Hundreds</li> <li>Inverse operations</li> <li>Ones</li> <li>Partial product</li> <li>Period</li> <li>Place value</li> <li>Product</li> <li>Regroup</li> <li>Round</li> <li>Standard form</li> <li>Tens</li> <li>Ten thousands</li> <li>Thousands</li> <li>Word form</li> </ul>

**Prerequisites**  
 Last year, teachers spent a large majority of the instructional time on these focus skills.  
 This year, students should have a strong foundation in the following areas:

Major Focus	Supporting Work	Additional Work (Minor)
Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and explain patterns in arithmetic. Develop understanding of fractions as numbers. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	Represent and interpret data. Reason with shapes and their attributes.	Use place value understanding and properties of operations to perform multi-digit arithmetic. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

## Fourth Grade First Quarter Pacing Guide

# Mathematics

### Introduction to Your Mathematics

*The following tips may be helpful as you use the Pacing Guide:*

- Introduce 9-week content skills according to the Pacing Guide.

Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations - Fractions	Measurement & Data	Geometry
<p><b>Weeks 1-3 Review of 3<sup>rd</sup> grade standards</b></p> <p><b>3.OA.3:</b> Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 7.1</b></li> </ul> <p><b>3.OA.7:</b> Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 7.9</b></li> </ul> <p><b>3.OA.8:</b> Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).)</p> <ul style="list-style-type: none"> <li>• <b>Lessons 7.10-7.11</b></li> <li>• Addition/Subtraction- within 1,000</li> <li>• Multiplication/Division- within 100</li> </ul> <p><b>Week 4: Start Core Instruction</b></p> <p><b>4.OA.1:</b> Interpret and write equations for multiplicative comparisons.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can write multiplication equations.</li> </ul> <p><b>4.OA.2:</b> Solve problems with whole numbers using the four operations. Interpret and write equations for multiplicative comparisons.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 2.1</b></li> <li><input type="checkbox"/> I can understand that multiplication equations can be seen as comparisons of groups (e.g., <math>24 = 4 \times 6</math> can be thought of as 4 groups of 6 or 6 groups of 4).</li> <li><input type="checkbox"/> I can multiply or divide to solve word problems by using drawings or writing equations and solving for a missing number.</li> </ul>	<p><b>Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000</b></p> <p><b>NBT.7:</b> Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can read and write larger whole numbers using numerals, words and in expanded form.</li> <li><input type="checkbox"/> I can compare two larger numbers by using what I know about the values in each place. symbols to show the comparison.</li> </ul> <p><b>4.NBT.7:</b> Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can read and write larger whole numbers using numerals, words and in expanded form.</li> <li><input type="checkbox"/> I can compare two larger numbers by using what I know about the values in each place. symbols to show the comparison.</li> </ul> <p><b>4.NBT.9:</b> Use place value understanding to round multi-digit whole numbers to any place.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can round larger whole numbers to any place.</li> <li>• <b>Lesson 1.4</b></li> </ul> <p><b>4.NBT.4:</b> Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 1.6-1.8</b></li> </ul> <p><b>4.NBT.11:</b> Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.</p> <ol style="list-style-type: none"> <li>Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.</li> </ol> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can multiply two two-digit numbers.</li> <li><input type="checkbox"/> I can illustrate and explain how to multiply larger numbers by using equations, arrays or models.</li> <li>• <b>Lessons 2.3-2.8 and 2.10-2.11</b></li> <li>• <b>Lessons 3.1-3.6</b></li> </ul> <p><b>4.NBT.6:</b> Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find</p>	<p><b>3.NF.3:</b> Explain the equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p><b>3.NF.3a:</b> Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 9.6</b></li> </ul> <p><b>3.NF.3b:</b> Recognize and generate simple equivalent fractions, e.g., <math>1/2 = 2/4</math>, <math>4/6 = 2/3</math>. Explain why the fractions are equivalent, e.g., by using a visual fraction model.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 9.7</b></li> </ul> <p><b>3.NF.3c:</b> Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 8.6</b></li> </ul> <p><b>3.NF.3d:</b> Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 9.1-9.5</b></li> </ul>	<p><b>3.MD.2:</b> Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</p> <p><b>Lessons 10.7-10.9</b></p> <p><b>3.MD.3:</b> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 2.1-2.6</b></li> </ul> <p><b>3.MD.4:</b> Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 2.7</b></li> <li>• <b>Lesson 10.6</b></li> </ul> <p><b>4.MD.23:</b> Apply the area and perimeter formulas for rectangles in real-world and mathematical situations.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can use what I know about area and perimeter to solve real world problems involving rectangles.</li> <li>• <b>Lessons 13.1-13.5</b></li> </ul> <p><b>Data Analysis</b></p> <p><b>4.DA.20 Interpret data in graphs (picture, bar, and line plots) to solve problems using numbers and operations.</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can interpret data in graphs.</li> </ul>	

**4.OA.2:** Solve word problems involving multiplicative comparison using drawings and write equations to represent the problem, using a symbol for the unknown number.

- I can use what I know about addition, subtraction, multiplication and division to solve multi- step word problems involving whole numbers.

**4.OA.3:** Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted.

- a. Write equations to show solutions for multi-step word problems with a letter standing for the unknown quantity.
- b. Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding.

- **Lesson 2.2**

- I can represent word problems by using equations with a letter standing for the unknown number.
- I can determine how reasonable my answers to word problems are by using estimation, mental math and rounding.

**4.OA.5:** Generate and analyze a number or shape pattern that follows a given rule.

- I can generate a number or shape pattern.

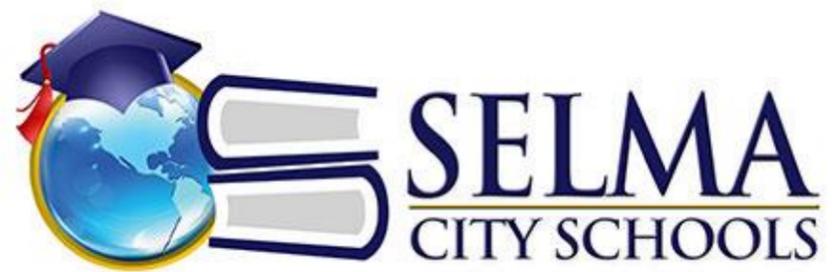
whole-number quotients and remainders with one-digit divisors and up to four-digit dividends. Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.

- I can find whole-number quotients and remainders with up to four-digit dividends and one- digit divisors.
- I can illustrate and explain how to divide larger numbers by using equations, arrays or models.
- **Lessons 4.1-4.2 and 4.4-4.11**

Mathematical Practices	Vocabulary		
<input type="checkbox"/> Make sense of problems and persevere in solving them. <input type="checkbox"/> Reason abstractly and quantitatively. <input type="checkbox"/> Construct viable arguments and critique the reasoning of others. <input type="checkbox"/> Model with mathematics. <input type="checkbox"/> Use appropriate tools strategically. <input type="checkbox"/> Attend to precision. <input type="checkbox"/> Look for and make use of structure. <input type="checkbox"/> Look for and express regularity in repeated reasoning.	Array	Estimate	Prime number
	Common factor	Equation	Product
	Common multiple	Equivalence	Quotient
	Compatible numbers	Factor	Regroup
	Composite number	Multiple	Round
	Divide	Multiplication	Term
	Dividend	Pattern	Associative Property of Multiplication
	Divisible	Partial product	Commutative Property of Multiplication
	Division	Partial quotient	
	Divisor	Place value	Distributive Property

**Prerequisites**  
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Major Focus	Supporting Work	Additional Work (Minor)
Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and explain patterns in arithmetic. Develop understanding of fractions as numbers. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	Represent and interpret data. Reason with shapes and their attributes.	Use place value understanding and properties of operations to perform multi-digit arithmetic. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.



## Fourth Grade Second Quarter Pacing Guide

# Mathematics

**Introduction to Your Mathematics Pacing Guide**

Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations - Fractions	Measurement & Data	Geometry
<p><b>4.OA.3:</b> Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted.</p> <ol style="list-style-type: none"> <li>Write equations to show solutions for multi-step word problems with a letter standing for the unknown quantity.</li> <li>Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding.</li> </ol> <p><input type="checkbox"/> I can multiply or divide to solve word problems by using drawings or writing equations and solving for a missing number.</p> <p><input type="checkbox"/> I can use what I know about addition, subtraction, multiplication and division to solve multi- step word problems involving whole numbers.</p> <p><input type="checkbox"/> I can determine how reasonable my answers to word problems are by using estimation, mental math and rounding.</p> <ul style="list-style-type: none"> <li>Lessons 2.9 and 2.12</li> <li>Lesson 3.7</li> <li>Lessons 4.3 and 4.12</li> </ul> <p><b>4.OA.4:</b> For whole numbers in the range 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors.</p> <ol style="list-style-type: none"> <li>Determine whether a whole number in the range 1 to 100 is a multiple of a given one-digit number.</li> <li>Determine whether a whole number in the range 1 to 100 is prime or composite.</li> </ol> <p><input type="checkbox"/> I can find all factor pairs for a whole number from 1 to 100.</p> <p><input type="checkbox"/> I can recognize a whole number as a multiple of each of its factors.</p> <p><input type="checkbox"/> I can determine whether a whole number from 1 to 100 is a multiple of a given</p>	<p><b>4.NBT.6:</b> Using models and quantitative reasoning, explain that in a multi-digit whole number, a digit in any place represents ten times what it represents in the place to its right.</p> <p><input type="checkbox"/> I can recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.</p> <ul style="list-style-type: none"> <li>Lessons 1.1 and 1.5</li> </ul> <p><b>4.NBT.7:</b> Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.</p> <p><input type="checkbox"/> I can read and write larger whole numbers using numerals, words and in expanded form.</p> <p><input type="checkbox"/> I can compare two larger numbers by using what I know about the values in each place. symbols to show the comparison.</p> <p><b>4.NBT.8:</b> Compare two multi-digit numbers based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</p> <p><input type="checkbox"/> I can compare two larger numbers and use the symbols <math>&gt;</math>, <math>=</math> and <math>&lt;</math> to show the comparison.</p> <ul style="list-style-type: none"> <li>Lessons 1.1-1.3</li> </ul> <p><b>4.NBT.9:</b> Use place value understanding to round multi-digit whole numbers to any place.</p> <p><input type="checkbox"/> I can round larger whole numbers to any place.</p> <ul style="list-style-type: none"> <li>Lesson 1.4</li> </ul> <p><b>4.NBT.10:</b> Use place value strategies to fluently add and subtract multi- digit whole numbers using the standard algorithm.</p> <p><input type="checkbox"/> I can add and subtract larger numbers.</p> <ul style="list-style-type: none"> <li>Lessons 1.6-1.8</li> </ul> <p><b>4.NBT.11:</b> Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.</p> <p><input type="checkbox"/> I can illustrate and explain the product of two factors using equations, rectangular</p>	<p><b>4.NF.13:</b> Using area and length fraction models, explain why one fraction is equivalent to another, taking into account that the number and size of the parts differ even though the two fractions themselves are the same size.</p> <ol style="list-style-type: none"> <li>Apply principles of fraction equivalence to recognize and generate equivalent fractions. <i>Example:</i> <math>\frac{a}{b}</math> is equivalent to <math>\frac{n \times a}{n \times b}</math>.</li> </ol> <p><input type="checkbox"/> I can explain (and show models for) why multiplying a numerator and a denominator by the same number does not change the value of a fraction.</p> <ul style="list-style-type: none"> <li>Lesson 6.1-6.5</li> </ul> <p><input type="checkbox"/> I can recognize and generate equivalent fractions based on my knowledge of numerators and denominators.</p> <p><b>4.NF.14:</b> Compare two fractions with different numerators and different denominators using concrete models, benchmarks (0, <math>\frac{1}{2}</math>, 1), common denominators, and/or common numerators, recording the comparisons with symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justifying the conclusions.</p> <ol style="list-style-type: none"> <li>Explain that comparison of two fractions is valid only when the two fractions refer to the same whole.</li> </ol> <p><input type="checkbox"/> I can compare two fractions with different numerators and different denominators by creating common denominators or numerators or by comparing them to a benchmark fraction like one-half.</p> <p><input type="checkbox"/> I can recognize that comparisons of fractions are valid only when the two fractions refer to the same whole.</p> <ul style="list-style-type: none"> <li>Lesson 6.6-6.8</li> </ul> <p><b>4.NF.15:</b> Model and justify decompositions of fractions and explain addition and subtraction of fractions as joining or separating parts referring to the same whole.</p> <ol style="list-style-type: none"> <li>Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and</li> </ol>	<p><b>4.MD.23:</b> Apply the area and perimeter formulas for rectangles in real-world and mathematical situations.</p> <p><input type="checkbox"/> I can use what I know about area and perimeter to solve real world problems involving rectangles.</p> <ul style="list-style-type: none"> <li>Lessons 13.1-13.5</li> </ul>	<p><b>4.G.27:</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures.</p> <p><input type="checkbox"/> I can identify and draw points, lines, line segments, rays, angles and perpendicular &amp; parallel lines.</p> <p><input type="checkbox"/> I can classify two-dimensional shapes based on what I know about their geometrical attributes.</p> <ul style="list-style-type: none"> <li>Lessons 10.1 and 10.3</li> </ul>

<p><input type="checkbox"/> one-digit number.</p> <p><input type="checkbox"/> I can determine whether a given whole number up to 100 is a prime or composite number.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 5.1-5.5</b></li> </ul> <p><b>4.OA.5:</b> Generate and analyze a number or shape pattern that follows a given rule.</p> <p><input type="checkbox"/> I can create a number or shape pattern that follows a given rule.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 5.6</b></li> <li>• <b>Lesson 10.7</b></li> </ul>	<p>c. arrays, and area models.</p> <p><input type="checkbox"/> I can multiply two two-digit numbers.</p> <p><input type="checkbox"/> I can illustrate and explain how to multiply larger numbers by using equations, arrays or models.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 2.3-2.8 and 2.10-2.11</b></li> <li>• <b>Lessons 3.1-3.6</b></li> </ul> <p><b>4.NBT.6:</b> Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends. Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.</p> <p><input type="checkbox"/> I can find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.</p> <p><input type="checkbox"/> I can illustrate and explain how to divide larger numbers by using equations, arrays or models.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 4.1-4.2 and 4.4-4.11</b></li> </ul>	<p>b. equations.</p> <p>c. Add and subtract fractions and mixed numbers with like denominators using fraction equivalence, properties of operations, and the relationship between addition and subtraction.</p> <p>d. Solve word problems involving addition and subtraction of fractions and mixed numbers having like denominators, using drawings, visual fraction models, and equations to represent the problem.</p> <p><input type="checkbox"/> I can understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p><input type="checkbox"/> I can decompose a fraction into a sum of fractions with the same denominator in more than one way and justify my work using models.</p> <p><input type="checkbox"/> I can add and subtract mixed numbers with like denominators.</p> <p><input type="checkbox"/> I can solve word problems involving addition and subtraction of fractions that refer to the same whole and that have like denominators.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 7.1</b></li> <li>• <b>Lessons 7.2 and 7.6</b></li> <li>• <b>Lessons 7.7-7.9</b></li> <li>• <b>Lessons 7.3-7.5 and 7.10</b></li> </ul>		
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Mathematical Practices		
<input type="checkbox"/> Make sense of problems and persevere in solving them. <input type="checkbox"/> Reason abstractly and quantitatively. <input type="checkbox"/> Construct viable arguments and critique the reasoning of others. <input type="checkbox"/> Model with mathematics. <input type="checkbox"/> Use appropriate tools strategically. <input type="checkbox"/> Attend to precision. <input type="checkbox"/> Look for and make use of structure. <input type="checkbox"/> Look for and express regularity in repeated reasoning.	Vocabulary	
	Benchmark	Multiple
	Common denominator	Numerator
	Common multiple	Place value
	Compare	Product
	Decimal	Simplest form
	Decimal point	Unit fraction
	Denominator	Tenth
	Equivalent decimals	Whole
	Equivalent fractions	Associative Property of Addition
	Factor	Commutative Property of Addition
	Fraction	Identity Property of Addition
	Hundredth	Identity Property of Multiplication
	Mixed number	
Prerequisites		
Last year, teachers spent a large majority of the instructional time on these focus skills. This year, students should have a strong foundation in the following areas:		
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Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and explain patterns in arithmetic. Develop understanding of fractions as numbers. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	Represent and interpret data. Reason with shapes and their attributes.	Use place value understanding and properties of operations to perform multi-digit arithmetic. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

## Fourth Grade Third Quarter Pacing Guide

# Mathematics

### Introduction to Your Mathematics Pacing Guide

Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations - Fractions	Measurement & Data	Geometry
<p><b>4.OA.4:</b> For whole numbers in the range 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors.</p> <p>c. Determine whether a whole number in the range 1 to 100 is a multiple of a given one-digit number.</p> <p>d. Determine whether a whole number in the range 1 to 100 is prime or composite.</p> <p><input type="checkbox"/> I can find all factor pairs for a whole number from 1 to 100.</p> <p><input type="checkbox"/> I can recognize a whole number as a multiple of each of its factors.</p> <p><input type="checkbox"/> I can determine whether a whole number from 1 to 100 is a multiple of a given one-digit number.</p> <p><input type="checkbox"/> I can determine whether a given whole number up to 100 is a prime or composite number.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 5.1-5.5</b></li> </ul>	<p><b>4.NBT.6:</b> Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends. Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.</p> <p><input type="checkbox"/> I can find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.</p> <p><input type="checkbox"/> I can illustrate and explain how to divide larger numbers by using equations, arrays or models.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 4.1-4.2 and 4.4-4.11</b></li> </ul>	<p><b>4.NF.15:</b> Model and justify decompositions of fractions and explain addition and subtraction of fractions as joining or separating parts referring to the same whole.</p> <ul style="list-style-type: none"> <li>○ Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and equations.</li> <li>○ Add and subtract fractions and mixed numbers with like denominators using fraction equivalence, properties of operations, and the relationship between addition and subtraction.</li> <li>○ Solve word problems involving addition and subtraction of fractions and mixed numbers having like denominators, using drawings, visual fraction models, and equations to represent the problem.</li> </ul> <p><input type="checkbox"/> I can understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p><input type="checkbox"/> I can decompose a fraction into a sum of fractions with</p> <p><input type="checkbox"/> the same denominator in more than one way and justify my work using models.</p> <p><input type="checkbox"/> I can add and subtract mixed numbers with like denominators.</p> <p><input type="checkbox"/> I can solve word problems involving addition and subtraction of fractions that refer to the same whole and that have like denominators.</p> <p><input type="checkbox"/> I can understand a fraction <math>a/b</math>, with <math>a &gt; 1</math>, as a sum of fractions <math>1/b</math>.</p> <p><input type="checkbox"/> I can apply my understanding of multiplication to multiply a fraction by a whole number.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 7.1</b></li> <li>• <b>Lessons 7.2 and 7.6</b></li> <li>• <b>Lessons 7.7-7.9</b></li> <li>• <b>Lessons 7.3-7.5 and 7.10</b></li> <li>• <b>Lessons 8.1-8.5</b></li> </ul>	<p><b>4.MD.21:</b> Select and use an appropriate unit of measurement for a given attribute (length, mass, liquid volume, time) within one system of units: metric - km, m, cm; kg, g, l, ml; customary - lb, oz; time - hr, min, sec.</p> <p>a. Within one system of units, express measurements of a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.</p> <p><input type="checkbox"/> I can show that I know the relative size of measurement units within one system of units (including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec).</p> <p><input type="checkbox"/> I can show the measurements in a larger unit in terms of smaller units and record these in a table.</p> <p><b>4MD.22:</b> Use the four operations to solve measurement word problems with distance, intervals of time, liquid volume, mass of objects, and money.</p> <p>b. Solve measurement problems involving simple fractions or decimals.</p> <p>c. Solve measurement problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p> <p>d. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <ul style="list-style-type: none"> <li>• <b>Lesson 12.5</b></li> </ul> <p><b>4.MD.23:</b> Apply the area and perimeter formulas for rectangles in real-world and mathematical situations.</p> <p><input type="checkbox"/> I can use what I know about area and perimeter to solve real world problems involving rectangles.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 13.1-13.5</b></li> </ul>	<p><b>4.G.27:</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures.</p> <p><input type="checkbox"/> I can identify and draw points, lines, line segments, rays, angles and perpendicular &amp; parallel lines.</p> <p><input type="checkbox"/> I can classify two-dimensional shapes based on what I know about their geometrical attributes.</p> <ul style="list-style-type: none"> <li>• <b>Lessons 10.1 and 10.3</b></li> </ul>

**4.NF.19:** Use visual models and reasoning to compare two decimals to hundredths (referring to the same whole), recording comparisons using symbols  $>$ ,  $=$ , or  $<$ , and justifying the conclusions.

- I can compare decimals using the symbols  $>$ ,  $=$  and  $<$ , and justify the comparison by using models.

- **Lesson 9.7**

**4.NF.18:** Use models and decimal notation to represent fractions with denominators of 10 and 100.

- I can use decimals to show fractions with denominators of 10 and 100.

Mathematical Practices	Vocabulary			
<input type="checkbox"/> Make sense of problems and persevere in solving them. <input type="checkbox"/> Reason abstractly and quantitatively. <input type="checkbox"/> Construct viable arguments and critique the reasoning of others. <input type="checkbox"/> Model with mathematics. <input type="checkbox"/> Use appropriate tools strategically. <input type="checkbox"/> Attend to precision. <input type="checkbox"/> Look for and make use of structure. <input type="checkbox"/> Look for and express regularity in repeated reasoning.	A.M., P.M.	Elapsed time	Line segment	Pint
	Adjacent angles	Fluid ounce	Line symmetry	Points
	Angles (right, acute, straight, obtuse)	Foot	Meter	Polygon
	Area	Formula	Metric	Pound
	Base	Gallon	Mile	Protractor
	Centimeter	Gram	Milliliter	Quadrilateral
	Circle	Half-gallon	Millimeter	Quart
	Clockwise	Height	Minute	Ray
	Counter clockwise	Hour	Obtuse	Second
	Convert	Inch	Ounce	Square Unit
	Cup	Kilogram	Parallel lines	Ton
	Decimeter	Kilometer	Parallelogram	Triangle (acute, obtuse, right)
	Degree	Line	Perpendicular lines	Vertex
		Line plot	Perimeter	yard

## Fourth Grade Fourth Quarter Pacing Guide

Go Math! Chapters 10-13

### Prerequisites

Last year, teachers spent a large majority of the instructional time on these focus skills.  
This year, students should have a strong foundation in the following areas:

Major Focus	Supporting Work	Additional Work (Minor)
Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and explain patterns in arithmetic. Develop understanding of fractions as numbers. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	Represent and interpret data. Reason with shapes and their attributes.	Use place value understanding and properties of operations to perform multi-digit arithmetic. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

# Mathematics

Introduction to Your Mathematics Pacing Guide

Operations & Algebraic Thinking	Number & Operations in Base Ten	Number & Operations Fractions	Measurement & Data	Geometry
<p><b>4.OA.4:</b> For whole numbers in the range 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors.</p> <ul style="list-style-type: none"> <li>e. Determine whether a whole number in the range 1 to 100 is a multiple of a given one-digit number.</li> <li>f. Determine whether a whole number in the range 1 to 100 is prime or composite.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can find all factor pairs for a whole number from 1 to 100.</li> <li><input type="checkbox"/> I can recognize a whole number as a multiple of each of its factors.</li> <li><input type="checkbox"/> I can determine whether a whole number from 1 to 100 is a multiple of a given one-digit number.</li> <li><input type="checkbox"/> I can determine whether a given whole number up to 100 is a prime or composite number.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 5.1-5.5</b></li> </ul> <p><b>4.OA.5:</b> Generate and analyze a number or shape pattern that follows a given rule.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can create a number or shape pattern that follows a given rule.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lesson 5.6</b></li> <li>• <b>Lesson 10.7</b></li> </ul>	<p><b>4.NBT.10:</b> Use place value strategies to fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can add and subtract larger numbers.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 1.6-1.8</b></li> </ul> <p><b>4.NBT.11:</b> Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.</p> <ul style="list-style-type: none"> <li>d. Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can multiply two two-digit numbers.</li> <li><input type="checkbox"/> I can illustrate and explain how to multiply larger numbers by using equations, arrays or models.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 2.3-2.8 and 2.10-2.11</b></li> <li>• <b>Lessons 3.1-3.6</b></li> </ul>	<p><b>4.NF.14:</b> Compare two fractions with different numerators and different denominators using concrete models, benchmarks (0, <math>\frac{1}{2}</math>, 1), common denominators, and/or common numerators, recording the comparisons with symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justifying the conclusions.</p> <ul style="list-style-type: none"> <li>a. Explain that comparison of two fractions is valid only when the two fractions refer to the same whole.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can compare two fractions with different numerators and different denominators by creating common denominators or numerators or by comparing them to a benchmark fraction like one-half.</li> <li><input type="checkbox"/> I can recognize that comparisons of fractions are valid only when the two fractions refer to the same whole.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lesson 6.6-6.8</b></li> </ul>	<p><b>4.MD.21:</b> Select and use an appropriate unit of measurement for a given attribute (length, mass, liquid volume, time) within one system of units: metric - km, m, cm; kg, g, l, ml; customary - lb, oz; time - hr, min, sec.</p> <ul style="list-style-type: none"> <li>e. Within one system of units, express measurements of a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can show that I know the relative size of measurement units within one system of units (including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec).</li> <li><input type="checkbox"/> I can show the measurements in a larger unit in terms of smaller units and record these in a table.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 12.1-12.4</b></li> <li>• <b>Lessons 12.6-12.8 and 12.11</b></li> </ul> <p><b>4.MD.22:</b> Use the four operations to solve measurement word problems with distance, intervals of time, liquid volume, mass of objects, and money.</p> <ul style="list-style-type: none"> <li>a. Solve measurement problems involving simple fractions or decimals.</li> <li>b. Solve measurement problems that require expressing measurements given in a larger unit in terms of a smaller unit.</li> <li>c. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can use the four operations (+, -, <math>\times</math>, <math>\div</math>) to solve word problems involving measurement.</li> <li><input type="checkbox"/> I can solve measurement problems involving simple fractions and decimals.</li> <li><input type="checkbox"/> I can solve problems that ask me to express measurements given in a larger unit in terms of a smaller unit.</li> <li><input type="checkbox"/> I can show measurement quantities using diagrams that involve a measurement scale (e.g., a number line).</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 12.9-12.10</b></li> </ul>	<p><b>4.G.27:</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify and draw points, lines, line segments, rays, angles and perpendicular &amp; parallel lines.</li> <li><input type="checkbox"/> I can classify two-dimensional shapes based on what I know about their geometrical attributes.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 10.1 and 10.3</b></li> </ul> <p><b>4.G.28:</b> Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.</p> <ul style="list-style-type: none"> <li>a. Describe right triangles as a category, and identify right triangles.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize and identify right triangles.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 10.2 and 10.4</b></li> </ul> <p><b>4.G.29:</b> Define a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.</p> <ul style="list-style-type: none"> <li>a. Identify line-symmetric figures and draw lines of symmetry.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize, identify and draw lines of symmetry.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Lessons 10.5-10.6</b></li> </ul>

**4.MD.24:** Identify an angle as a geometric shape formed wherever two rays share a common endpoint.

- I can make a line plot to show a data set of measurements involving fractions.
- I can solve problems involving addition and subtraction of fractions by using information shown in line plots.

**4.MD.26:** Decompose an angle into non-overlapping parts to demonstrate that the angle measure of the whole is the sum of the angle measures of the parts.

a. Solve addition and subtraction problems on a diagram to find unknown angles in real-world or mathematical problems.

- I can recognize angles as geometric shapes where two rays share a common endpoint.
- I can understand concepts of angle measurement.
- I can understand that an angle that turns through in one-degree angles is said to have an angle measurement of  $n$  degrees
  - **Lessons 11.1-11.5**

**4.MD.25:** Use a protractor to measure angles in whole-number degrees and sketch angles of specified measure.

- I can use a protractor to measure and sketch angles in whole-number degrees.
  - **Lesson 11.3**