

**Bermudian Springs Pennsylvania Core Standards  
Math Framework  
Fourth Grade**



## Introduction

Bermudian Springs School District, in partnership with all stakeholders, recognizes the importance of our students being able to use mathematics in everyday life and in the workplace. New knowledge, tools, and ways of solving math problems will significantly enhance opportunities for shaping our students future. Math competencies open doors to productive futures. All students should have the opportunity and support necessary to learn significant math with depth and understanding. Common Core has provided critical areas designed to bring focus to the standards at each grade by describing key concepts in order to guide instruction. The critical areas for instructional focus for fourth grade math outlined by the *Common Core* include the following three areas:

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

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

**3. Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.** Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

*(Common Core, pg.27)*

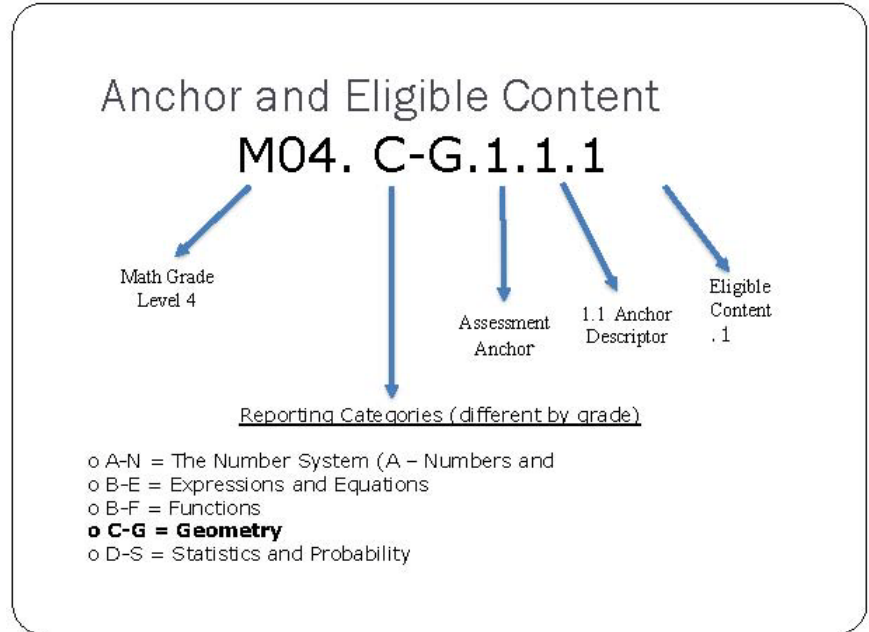
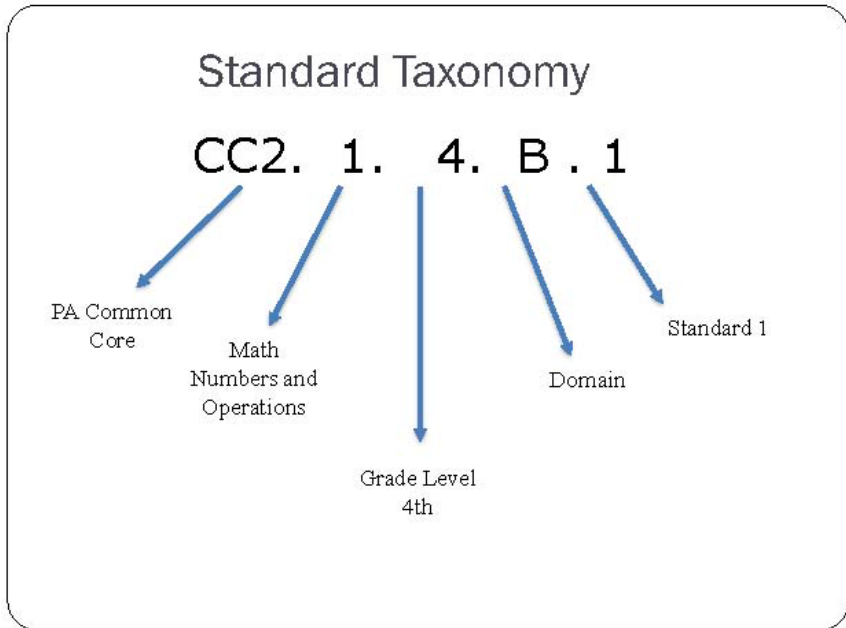
**Adapted from: commoncore.org, 2013; parconline.org, 2013; pdesas.org, 2013**

## Standards for Mathematical Practices for Fourth Grade

Bermudian Springs School District incorporated the following Mathematical Practices which are expected to be integrated into every mathematics lesson for all students as outlined in the Pennsylvania Core Standards. Below are a few examples of how these mathematical practices may be integrated into some tasks that Bermudian students will apply in fourth grade.

Mathematic Practices	Explanations and Examples
<b>1. Make sense of problems and persevere in solving them.</b>	Mathematically proficient students in grade 4 know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Fourth graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.
<b>2. Reason abstractly and quantitatively.</b>	Mathematically proficient fourth graders should recognize that a number represents a specific quantity. They connect the quantity to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions, record calculations with numbers, and represent or round numbers using place value concepts.
<b>3. Construct viable arguments and critique the reasoning of others.</b>	In fourth grade mathematically proficient students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain their thinking and make connections between models and equations. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.
<b>4. Model with mathematics.</b>	Mathematically proficient fourth grade students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fourth graders should evaluate their results in the context of the situation and reflect on whether the results make sense.
<b>5. Use appropriate tools strategically.</b>	Mathematically proficient fourth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use graph paper or a number line to represent and compare decimals and protractors to measure angles. They use other measurement tools to understand the relative size of units within a system and express measurements given in larger units in terms of smaller units.

<p><b>6. Attend to precision.</b></p>	<p>As fourth graders develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, they use appropriate labels when creating a line plot.</p>
<p><b>7. Look for and make use of structure.</b></p>	<p>In fourth grade mathematically proficient students look closely to discover a pattern or structure. For instance, students use properties of operations to explain calculations (partial products model). They relate representations of counting problems such as tree diagrams and arrays to the multiplication principal of counting. They generate number or shape patterns that follow a given rule.</p>
<p><b>8. Look for and express regularity in repeated reasoning.</b></p>	<p>Students in fourth grade should notice repetitive actions in computation to make generalizations. Students use models to explain calculations and understand how algorithms work. They also use models to examine patterns and generate their own algorithms. For example, students use visual fraction models to write equivalent fractions.</p>



Mathematical Standards: Development and Progression

	Pre K	K	1	2	3	4	5	6	7	8	HS
2.1 Numbers and Operations	(A) Counting & Cardinality										
	(B) Number and Operations in Base Ten						(D) Ratios and Proportional Relationships				(F) Number and Quantity
					(C) Number and Operations - Fractions					(E) The Number System	
2.2 Algebraic Concepts	(A) Operations and Algebraic Thinking						(B) Expressions and Equations			(D) Algebra	
										(C) Functions	
2.3 Geometry											
	(A) Geometry										
2.4 Measurement, Data and Probability				(A) Measurement and Data				(B) Statistics and Probability			

<b>2.1 Number and Operations</b>	
<b>Domain:</b> (B) Number & Operations in Base Ten	
<b>Standard:</b> CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	
<b>Assessment Anchor:</b> M04.A-T.1.1 Apply place-value and numeration concepts to compare, find equivalencies, and round.	
<ul style="list-style-type: none"> <li>• <b>M04.A-T.1.1.1</b> Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right. <i>Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.</i></li> <li>• <b>M04.A-T.1.1.2</b> Read and write whole numbers in expanded, standard and word form through 1,000,000</li> <li>• <b>M04.A-T.1.1.3</b> Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols.</li> <li>• <b>M04.A-T.1.1.4</b> Round multi-digit whole numbers (through 1,000,000) to any place.</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Apply place value, show an understanding of multi-digit whole numbers	ballpark estimate, compare, digits, equal to, expanded form, greater than, less than, million, multi-digit, place value, rounding, standard form, ten times, whole number, word form
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Generalize understanding of place value to 1,000,000</li> <li>• Explain how a digit's value changes based on its position on the place value chart</li> <li>• Generate numbers in words, expanded and standard forms</li> <li>• Evaluate multi-digit numbers using symbols of comparison</li> <li>• Apply knowledge of place value to round a number</li> </ul>	

<b>2.1 Number and Operations</b>	
<b>Domain:</b> (B) Number & Operations in Base Ten	
<b>Standard:</b> CC.2.1.4.B.2 Use place value understanding and properties of operations to perform multi-digit arithmetic.	
<b>Assessment Anchor:</b> M04.A-T.2.1 Use operations to solve problems.	
<ul style="list-style-type: none"> <li>• <b>M04.A-T.2.1.1</b> Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).</li> <li>• <b>M04.A-T.2.1.2</b> Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.</li> <li>• <b>M04.A-T.2.1.3</b> Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.</li> <li>• <b>M04.A-T.2.1.4</b> Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits <math>\times</math> 1 digit, excluding powers of 10).</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Use place value, understand properties, perform multi-digit arithmetic	add, ballpark estimate, differences, regrouping, subtract , sum, trade-first, whole numbers
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Calculate multi-digit numbers using addition and subtraction</li> <li>• Apply understanding of models for multiplication</li> <li>• Compute products of multi-digit whole numbers</li> <li>• Apply division algorithms to find a quotient</li> <li>• Interpret remainders based upon the context of the problem</li> <li>• Demonstrate an understanding of rounding to estimate the answer</li> <li>• Select and accurately apply appropriate methods to estimate or mentally calculate answers</li> </ul>	

<b>2.1 Number and Operations</b>	
<b>Domain:</b> (C) Number & Operations - Fractions	
<b>Standard:</b> CC. 2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.	
<b>Assessment Anchor:</b> M04.A-F.1.1 Find equivalencies and compare fractions.	
<ul style="list-style-type: none"> <li>• M04.A-F.1.1.1 Recognize and generate equivalent fractions.</li> </ul>	
<ul style="list-style-type: none"> <li>• M04.A-F.1.1.2 Compare two fractions with different numerators and different denominators</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Extend understanding of fractions, show equivalence and order	compare, denominator, equivalent, fractions, numerator
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Apply patterns to recognize two fractions can be equal</li> <li>• Develop methods to generate equivalent fractions</li> <li>• Order fractions according to fractional parts</li> <li>• Evaluate fractions using symbols of comparison</li> </ul>	



<b>2.1 Number and Operations</b>	
<b>Domain:</b> (C) Number & Operations - Fractions	
<b>Standard:</b> CC. 2.1.4.C.2 Build Fractions from unit fractions by applying and extending previous understandings of operations	
<b>Assessment Anchor:</b> M04.A-F.2.1 Solve problems involving fractions and whole numbers (straight computation or word problems).	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.1</b> Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be reduced; no improper fractions as the final answer).</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.2</b> Decompose a fraction or a mixed number into a sum of fractions with the same denominator (Denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (for example, by using a visual fraction model). <i>Example 1:</i> <math>3/8 = 1/8 + 1/8 + 1/8</math> OR <math>3/8 = 1/8 + 2/8</math> <i>Example 2:</i> <math>2\ 1/12 = 1 + 1 + 1/12 = 12/12 + 12/12 + 1/12</math></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.3</b> Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be reduced; no improper fractions as the final answers).</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.4</b> Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.5</b> Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers do not need to be reduced or written as a mixed number). <i>Example:</i> <math>5 \times (1/4) = 5/4</math></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.6</b> Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers do not need to be reduced or written as a mixed number). <i>Example:</i> <math>3 \times (5/6) = 15/6</math></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.2.1.7</b> Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Build fractions, apply unit fractions, extend operations, understand whole numbers	common denominator, decompose, fraction of, mixed number, non-unit fraction
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Calculate fractions with like denominators using addition and subtraction</li> <li>• Deconstruct a fraction as a sum of its parts</li> <li>• Calculate mixed numbers with like denominators using addition and subtraction</li> <li>• Formulate an addition/subtraction number model with fractions to solve a word problem</li> <li>• Find a fractional part of a whole number by a unit fraction</li> <li>• Find a fractional part of a whole number by a non-unit fraction</li> <li>• Formulate an multiplication number model with fractions to solve a word problem</li> </ul>	

<b>2.1 Number and Operations</b>	
<b>Domain:</b> (C) Number & Operations - Fractions	
<b>Standard:</b> CC. 2.1.4.C.2 Build Fractions from unit fractions by applying and extending previous understandings of operations	
<b>Assessment Anchor:</b> M04.A-F.3.1 Use operations to solve problems involving decimals, including converting between fractions and decimals (may include word problems).	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.3.1.1</b> Add two fractions with respective denominators 10 and 100. <i>Example: Express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{30}{100} + \frac{4}{100} = \frac{34}{100}</math>.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.3.1.2</b> Use decimal notation for fractions with denominators 10 or 100. <i>Example: Rewrite 0.62 as <math>\frac{62}{100}</math> and vice versa.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.A-F.3.1.3</b> Compare two decimals to hundredths using the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions.</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Connect decimal notation to fractions, compare decimal fractions	decimal notation, hundredths, tenths
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Calculate fractions with denominators 10 and 100 using addition</li> <li>• Convert between decimals and fractions</li> <li>• Evaluate decimals using symbols of comparison</li> <li>• Relate understandings of fractions to reading and writing of decimals and understand decimal notation as an extension of the base-ten system.</li> </ul>	

<b>2.2 Algebraic Concepts</b>	
<b>Domain:</b> (A) Operations and Algebraic Thinking	
<b>Standard:</b> CC. 2.2.4.A.1 Represent and solve problems involving the four operations.	
<b>Assessment Anchor:</b> M04.B-O.1.1 Use numbers and symbols to model the concepts of expressions and equations.	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.1.1.1</b> Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. <i>Example 1: Interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8 can be represented by the equation <math>24 = 3 \times 8</math> or <math>24 = 8 \times 3</math>.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.1.1.2</b> Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. <i>Example: Know that <math>3 \times 4</math> can be used to represent that Student A has 4 objects and Student B has 3 times as many objects, and not just 3 more objects.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.1.1.3</b> Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.1.1.4</b> Identify the missing symbol (+, −, ×, ÷, =, &lt;, &gt;) that makes a number sentence true (single-digit divisor only).</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Represent problems four operations, solve problems using four operations	additive, comparison, false, interpret, mathematical operations (add, subtract, multiply, divide), missing symbol, multiplicative, number sentence, remainders, true, verbal statement of, multiplication equations
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Formulate a statement to explain a multiplication number model</li> <li>• Assess a word problem to determine which operation is required</li> <li>• Justify the procedure used to solve a word problem</li> <li>• Create a true number sentence by identifying the missing symbol</li> </ul>	

<b>2.2 Algebraic Concepts</b>	
<b>Domain:</b> (A) Operations and Algebraic Thinking	
<b>Standard:</b> CC. 2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples.	
<b>Assessment Anchor:</b> M04.B-O.2.1 Develop and apply number theory concepts to represent numbers in various ways.	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.2.1.1</b> Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one-digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Develop and apply number theory concepts, find factors and multiples	composite, factor pairs, factors, interval, multiples, prime
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Recognize factor pairs of a whole number</li> <li>• Provide justification that a whole is a multiple of each of its factors</li> <li>• Classify numbers as multiples of a given number</li> <li>• Identify a number as prime or composite and provide justification</li> </ul>	

<b>2.2 Algebraic Concepts</b>	
<b>Domain:</b> (A) Operations and Algebraic Thinking	
<b>Standard:</b> CC.2.2.4A.4 Generate and analyze patterns using one rule.	
<b>Assessment Anchor:</b> M04.B-O.3.1 Recognize, describe, extend, create, and replicate a variety of patterns.	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.3.1.1</b> Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>Example 1: Given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms alternate between odd and even numbers. Example 2: Given the rule “increase the number of sides by 1” and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.3.1.2</b> Determine the missing elements in a function table (limit to +, −, or × and to whole numbers or money).</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.B-O.3.1.3</b> Determine the rule for a function given a table (limit to +, −, or × and to whole numbers).</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Generate patterns, analyze one rule	features, function, function table, number pattern, rule, shape pattern
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Extend a pattern to determine a missing number</li> <li>• Use models or justifications to represent the features of a pattern</li> <li>• Generate and analyze number patterns</li> <li>• Apply a rule to determine the missing parts in a function table</li> <li>• Formulate a rule given a function table</li> </ul>	

<b>2.3 Geometry</b>	
<b>Domain:</b> (A) Geometry	
<b>Standard:</b> CC2.3.4.A.1 Draw lines and angles and identify these in two-dimensional figures.	
<b>Assessment Anchor:</b> M04.C-G.1.1 - List properties, classify, draw, and identify geometric figures in two dimensions.	
• <b>M04.C-G.1.1.1</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Draw lines and angles, identify lines and angles in two-dimensional figures	acute, angles, figures, line segments, lines, obtuse, parallel, perpendicular, points, rays, right, two-dimensional
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Create points, line segments, rays and angles</li> <li>• Classify angles as right, acute or obtuse</li> <li>• Develop models to represent perpendicular or parallel lines</li> <li>• Compare and Contrast two-dimensional figures</li> <li>• Formulate a model for a given situation</li> </ul>	

<b>2.3 Geometry</b>	
<b>Domain:</b> (A) Geometry	
<b>Standard:</b> CC2.3.4.A.2 <b>Classify two-dimensional figures by properties of their lines and angles.</b>	
<b>Assessment Anchor:</b> M04.C-G.1.1 List properties, classify, draw, and identify geometric figures in two dimensions	
<ul style="list-style-type: none"> <li>• <b>M04.C-G.1.1.2</b> Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Classify two-dimensional figures	absence, classify, presence, properties, right triangle
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Compare and contrast two-dimensional figures based on geometric properties</li> <li>• Classify two-dimensional figures based upon their properties</li> <li>• Provide justification what makes a right angle</li> <li>• Represent a right angle in words, pictures, or symbols</li> </ul>	
<b>2.3 Geometry</b>	
<b>Domain:</b> (A) Geometry	
<b>Standard:</b> CC2.3.4.A.3 <b>Recognize symmetric shapes and draw lines of symmetry</b>	
<b>Assessment Anchor:</b> M04.C-G.1.1 List properties, classify, draw, and identify geometric figures in two dimensions	
<ul style="list-style-type: none"> <li>• <b>M04.C-G.1.1.3</b> Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry)</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Recognize symmetric shapes, draw lines of symmetry	lines of symmetry, symmetric
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Explain thinking when identifying a line of symmetry</li> <li>• Identify and draw lines of symmetry</li> <li>• Create a shape that is symmetric</li> <li>• Determine whether a figure is symmetric and provide evidence</li> </ul>	

<b>2.4 Measurement, Data and Probability</b>	
<b>Domain:</b> (A) Measurement and Data	
<b>Standard:</b> CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	
<b>Assessment Anchor:</b> M04.D-M.1.1 - Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.1.1.1</b> Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; c, pt, qt, gal), metric units (cm, m, km; g, kg; mL, L), and time (sec, min, hr, day, wk, mo, yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. <b>A table of equivalencies will be provided.</b> <i>Example 1: Know that 1 kg is 1,000 times as heavy as 1g Example 2: Express the length of a 4-foot snake as 48 in.</i></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.1.1.2</b> Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; money, including problems involving simple fractions or decimals; and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.1.1.3</b> Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. <b>The formulas will be provided.</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.1.1.4</b> Identify time (analog or digital) as the amount of minutes before or after the hour. <i>Example 1: 2:50 is the same as 10 minutes before 3:00. Example 2: Quarter past six is the same as 6:15.</i></li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Solve problems involving measurements, conversions from larger unit to smaller unit	analog time, area, decimals, digital time, distances, elapsed time, formulas, intervals of time, length, liquid volume, metric units (cm, m, km; g, kg; mL, L), minutes after, minutes before, money, perimeter, simple fractions, standard units (in., ft, yd, mi; oz., lb; c, pt, qt, gal), time (sec, min, hr, day, wk, mo, yr), unit, weight (mass)
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Develop methods to generate conversions of measurements from a larger unit to a small one</li> <li>• Determine elapsed time</li> <li>• Formulate a mathematical model to solve word problems including measurement</li> <li>• Apply the formula for area and perimeter to solve problems</li> <li>• Report time as minutes before or after the hour</li> </ul>	



<b>2.4 Measurement, Data and Probability</b>	
<b>Domain:</b> (A) Measurement and Data	
<b>Standard:</b> CC.2.4.4.A.2 Translate information from one type of data display to another.	
<b>Assessment Anchor:</b> M04.D-M.2.1 Organize, display, and answer questions based on data.	
• <b>M04.D-M.2.1.3</b> Translate information from one type of display to another (table, chart, bar graph, or pictograph).	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Translate information	bar graph, chart, data, display, pictograph, table
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Use displays to answer questions</li> <li>• Interpret information from a graph onto another type of display</li> <li>• Retrieve information from a display and use it to solve a problem</li> <li>• Apply knowledge of multiplication strategies to read a pictograph</li> <li>• Generalize a pattern in a display to confirm a prediction</li> </ul>	

<b>2.4 Measurement, Data and Probability</b>	
<b>Domain:</b> (A) Measurement and Data	
<b>Standard:</b> CC2.4.4.A.4 Represent and interpret data involving fractions using information provided in a line plot	
<b>Assessment Anchor:</b> M04.D-M.2.1 Organize, display, and answer questions based on data.	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.2.1.1</b> Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, or <math>\frac{1}{8}</math>).</li> <li>• <b>M04.D-M.2.1.2</b> Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math>).</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Represent and interpret data involving fraction	data, fractions, information, line plot, set of measurements
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Formulate a line plot that displays fractions of a unit</li> <li>• Apply appropriate methods to interpret fractional data</li> <li>• Solve problems, including addition and subtraction of fractions, using information provided on a line plot</li> </ul>	

2.4 Measurement, Data and Probability	
<b>Domain:</b> (A) Measurement and Data	
<b>Standard:</b> CC2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.	
<b>Assessment Anchor:</b> M04.D-M.3.1 - Use appropriate tools and units to sketch an angle and determine angle measurements	
<ul style="list-style-type: none"> <li>• <b>M04.D-M.3.1.1</b> Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure.</li> <li>• <b>M04.D-M.3.1.2</b> Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.)</li> </ul>	
<b>Key Concepts</b>	<b>Key Vocabulary</b>
Measure angles, use properties of adjacent angles to solve problems	adjacent, angles, degrees, diagram, non-overlapping, protractors, real-world
<b>Competencies</b>	
<i>Describe what students should be able to do (key skills) as a result of this instruction</i>	
<ul style="list-style-type: none"> <li>• Measure angles to the nearest whole-number degrees</li> <li>• Create angles to correspond with a measurement</li> <li>• Apply addition and subtraction algorithms to angles</li> <li>• Formulate a problem to find unknown angles, supported with an explanation</li> </ul>	