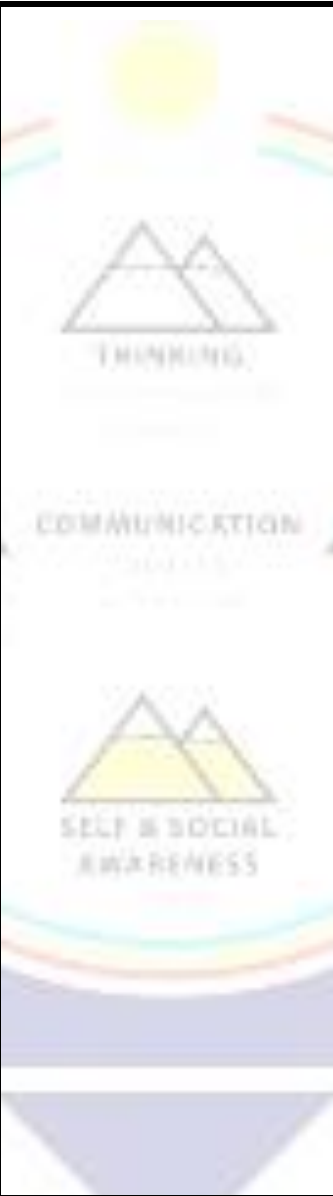


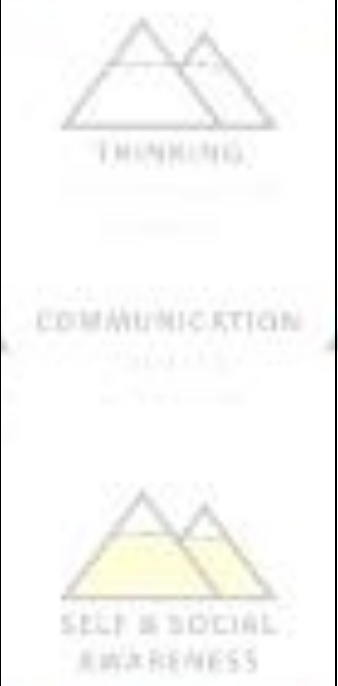
Ganado Unified School District


(Mathematics/4th Grade)

PACING Guide SY 2015-2016



Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
1st Quarter Topics 1-8	August 2015 to October 2015			
Topic 1 Multiplication and Division: Meanings and Facts Resources ~Scott-Foresman-Addison Wesley en-Vision Math and its Components ~enVision Math Website @ www.pearsonsuccessnet.com ~Accelerated Math Program Renaissance Place, Real Time ~ATI- Galileo Quarterly Benchmark Assessments ~FASTT Math	AZ CC Standard: 4.OA.1. Interpret a multiplication equation as a comparison, e.g., interpret $35=5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplicative equations. 4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. AZ CC Standard: 4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. 4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure. AZ CC Standard: 4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using	~How can patterns and properties can be used to find some multiplication facts? ~How can unknown multiplication facts be found by breaking them apart into known facts? ~How can unknown division facts be found by thinking about a related multiplication fact?	1. I can recognize multiplication as repeated addition of equal groups used in arrays and comparisons. 2. I can use patterns to find products with factors of 2, 5, and 9. 3. I can use multiplication properties to simplify computations. 4. I can use the Distributive Property to find products of the factors of 3, 4, 6, 7, and 8 by breaking apart problems in simpler problems. 5. I can recognize patterns and be able to continue the pattern. 6. I can use and draw models to solve division problems. 7. I can use arrays to write and complete multiplication and division fact families. 8. I can use multiplication facts with 0 and 1 to learn about	○ array ○ product ○ factors ○ multiple ○ Commutative Property of Multiplication ○ Zero Property of Multiplication ○ Identity Property of Multiplication ○ Distributive Property ○ Inverse operations ○ fact family

<p>~Buckle Down AIMS Test Preparation ~Workbook: Step-by-Step Model Drawing Book</p>	<p>equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computations and estimation strategies including rounding.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.OA.4.</p> <p>Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.OA.5.</p> <p>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. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p>		<p>special division rules with 0 and 1.</p> <p>9. I can identify multiplication facts related to division facts in order to solve division problems.</p> <p>10. I can draw pictures to problem solve multiplication situations and use their pictures to write number sentences.</p>	
<p>Topic 2</p>	<p>AZ CC Standard: 4.OA.3.</p>			<p>○ repeating pattern</p>

Generate and Analyze Patterns	<p>Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computations and estimation strategies including rounding.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.OA.5. 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. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p>	<p>~How can patterns be used to describe how two quantities are related?</p> <p>~How can a relationship between two quantities be show using a table?</p> 	<ol style="list-style-type: none"> 1. I can identify and extend repeating geometric or repeating number patterns. 2. I can identify and extend whole-number patterns involving addition and subtraction. 3. I can extend tables of ordered pairs for situations involving multiplication, addition, or subtraction. 4. I can find a rule and extend the table, given a table of number pairs. 5. I can extend patterns of cubes or tiles. 6. I can use the strategies <i>Act It Out</i> and <i>Use Reasoning</i> to solve problems. 	
Topic 3 Place Value	<p>AZ CC Standard: 4.NBT.1. 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. <i>For example, recognize that 700 (divided by) 70 = 10 by applying concepts of place value and division.</i></p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p>	<p>~How are greater numbers read and written?</p> <p>~How can whole numbers be compared and ordered?</p>	<ol style="list-style-type: none"> 1. I can read and write 3-digit and 4-digit numbers. 2. I can learn how digits within a multi-digit whole number relate to each other by their place value. 	<ul style="list-style-type: none"> ○ digits ○ place value ○ standard form ○ expanded form ○ word form ○ compare

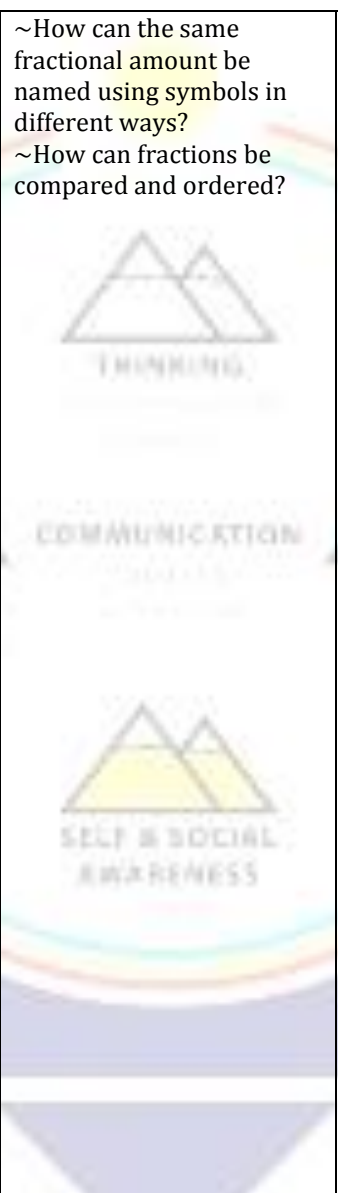
	<p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NBT.2.</p> <p>Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NBT.3.</p> <p>Use place value understanding to round multi-digit whole numbers to any place.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.6</i> - Attend to precision.</p>		<p>3. I can compare whole numbers through hundred thousand.</p> <p>4. I can apply knowledge of place value to compare and order numbers.</p> <p>5. I can show how to use place value to round whole numbers.</p> <p>6. I can systematically find and record all possible outcomes for a situation.</p>	
<p>Topic 4</p> <p>Addition and Subtraction of Whole Numbers</p>	<p>AZ CC Standard: 4.NBT.3.</p> <p>Use place value understanding to round multi-digit whole numbers to any place.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>AZ CC Standard: 4.NBT.4.</p> <p>Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>4. <i>MP.8</i> - Look for and express regularity in repeated reasoning.</p>	<p>~How can sums and differences of whole numbers be estimated?</p> <p>~What are standard procedures for adding and subtracting whole numbers?</p>	<p>1. I can apply a variety of methods to add and subtract whole numbers mentally.</p> <p>2. I can round whole numbers to estimate sums and differences.</p> <p>3. I can add numbers to hundreds and thousands with and without regrouping.</p> <p>4. I can subtract numbers to thousands with and without regrouping.</p> <p>5. I can subtract numbers with zeros to thousands.</p> <p>6. I can use a picture or diagram to translate an everyday situation into a number sentence or equation.</p>	<ul style="list-style-type: none"> ○ breaking apart ○ compensation ○ counting on ○ Commutative Property of Addition ○ Associate Property of Addition ○ Identity Property of Addition ○ inverse operations
<p>Topic 5</p>	<p>AZ CC Standard: 4.NBT.5.</p>	<p>~How can some products be found mentally?</p>	<p>1. I can use arrays to multiply by 10 and 100.</p>	<ul style="list-style-type: none"> ○ partial products ○ compensation

Number Sense: Multiplying by 1-Digit Numbers	<p>Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively. 4. <i>MP.3</i> - Construct viable arguments and critique the reasoning of others. 4. <i>MP.4</i> - <i>Model</i> with mathematics. 4. <i>MP.5</i> - Use appropriate tools strategically. 4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them. 4. <i>MP.2</i> - Reason abstractly and quantitatively. 4. <i>MP.4</i> - <i>Model</i> with mathematics. 4. <i>MP.5</i> - Use appropriate tools strategically. 4. <i>MP.6</i> - <i>Attend</i> to precision. 4. <i>MP.7</i> - Look for and make use of structure.</p>	~How can products be estimated?	<ol style="list-style-type: none"> I can use basic multiplication facts and number patterns to multiply by multiples of 10 and 100. I can break apart numbers and use arrays to multiply 2-digit by 1-digit numbers. I can use compensation to multiply numbers mentally. I can use rounding to estimate solutions to multiplication problems. I can check for reasonableness to problems by making sure my calculations answer the questions asked and by using estimation to make sure my calculation was performed correctly. 	
Topic 6 Developing Fluency: Multiplying by 1-Digit Numbers	<p>AZ CC Standard: 4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p>	~How can arrays be used to find products? ~What is a standard procedure for multiplying multi-digit numbers?	<ol style="list-style-type: none"> I can record multiplication using an expanded algorithm. I can multiply 2-digit numbers by 1-digit numbers using paper-and-pencil methods. I can multiply 2-digit numbers by 1-digit numbers using the standard algorithm 	<ul style="list-style-type: none"> product array factor rounding


	<p>4. <i>MP.3</i> - Construct viable arguments and critique the reasoning of others.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p>		<p>and estimate to check for reasonableness.</p> <p>4. I can use the standard algorithm to multiply 3- and 4-digit numbers by 1-digit numbers.</p> <p>5. I can multiply 2-, 3-, and 4-digit numbers by 1-digit numbers using the standard algorithm and estimate to check for reasonableness.</p> <p>6. I can identify what information in a problem is missing or is not needed.</p>	
<p>Topic 7 Number Sense: Multiplying by 2-Digit Numbers</p> <p>Resources ~Scott-Foreman-Addison Wesley end-Vision Math and its Components ~envision Math Website @ www.pearsonsuccessnet.com ~Accelerated Math Program Renaissance Place, Real Time ~ATI- Galileo Quarterly Benchmark Assessments ~FASTT Math</p>	<p>AZ CC Standard: 4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.3</i> - Construct viable arguments and critique the reasoning of others.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.6</i> - <i>Attend</i> to precision.</p>	<p>~How can greater products be found mentally?</p> <p>~How can greater products be estimated?</p> 	<p>1. I can use arrays to multiply 2-digit numbers by multiples of 10.</p> <p>2. I can discover and use patterns to multiply by multiples of 10.</p> <p>3. I can use rounding to estimate solutions to multiplication problems involving 2-digit numbers.</p> <p>4. I can use compatible numbers and rounding to estimate solutions to multiplication problems involving two 2-digit numbers. Identify and answer hidden questions to solve multi-step problems with operations.</p>	<p>○ compatible numbers</p>


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Topic 8 Developing Fluency: Multiplying by 2-Digit Numbers	AZ CC Standard: 4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 4. MP.2 - Reason abstractly and quantitatively. 4. MP.3 - Construct viable arguments and critique the reasoning of others. 4. MP.4 - <i>Model</i> with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure.	~How can arrays be used to find greater products? ~What is a standard procedure for multiplying multi-digit numbers?	<ol style="list-style-type: none"> 1. I can use arrays to multiply two-digit numbers by two-digit numbers to find the product. 2. I can use an expanded algorithm to multiply two-digit numbers by two-digit numbers to find the product. 3. I can use grids and patterns to multiply 2-digit numbers and multiples of 10. 4. I can use partial products to multiply 2-digit numbers by 2-digit numbers and find the products. Solve two-question problems. 	○
2nd Quarter Topics 9 - 13	October 2015 to December 2015			
Topic 9 Number Sense: Dividing by 1-Digit Divisors	AZ CC Standard: 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or models. 4. MP.2 - Reason abstractly and quantitatively. 4. MP.3 - Construct viable arguments and critique the reasoning of others. 4. MP.4 - <i>Model</i> with mathematics.	~What are the different meanings of division? ~How can mental math and estimation be used to divide?	<ol style="list-style-type: none"> 1. I can use basic facts and patterns of zeros to solve division problems with 3-digit dividends and 1-digit divisors. 2. I can use compatible numbers and rounding to estimate quotients. 3. I can estimate quotients of multi-digit division problems using multiplication facts and place-value concepts. 	○ remainder

	<p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p>		<p>4. I can divide whole numbers by 1-digit divisors resulting in quotients with remainders. I can use words and models to represent multiplication and division problems accurately. Draw pictures and write related number sentences to solve problems.</p>	
<p>Topic 10 Developing Fluency: Dividing by 1-Digit Divisors</p>	<p>AZ CC Standard: 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or models.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively. 4. <i>MP.3</i> - Construct viable arguments and critique the reasoning of others. 4. <i>MP.4</i> - <i>Model</i> with mathematics. 4. <i>MP.5</i> - Use appropriate tools strategically. 4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NBT.3. Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations including problems in which remainders must be interpreted. 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.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively. 4. <i>MP.6</i> - Attend to precision.</p>	<p>~How can repeated subtraction be used to model division? ~What is the standard procedure for dividing multi-digit numbers?</p>	<p>1. I can use repeated subtraction to model division. 2. I can record division as repeated subtraction. 3. I can use place value to understand the algorithm of long division. 4. I can use the standard algorithm to divide a two-digit number by a one-digit number. 5. I can use the standard algorithm to divide 3-digit numbers by 1-digit numbers. 6. I can use the standard algorithm to divide 3-digit numbers by 1-digit numbers and properly decide where to begin dividing. 7. I can estimate and find quotients for 4-digit dividends and 1-digit divisors. Identify the hidden question in a multi-step problem. Use the answer to that hidden question to solve the original problem.</p>	
<p>Topic 11</p>	<p>AZ CC Standard: 4.NF.2.</p>			<ul style="list-style-type: none"> fraction


Fraction Equivalence and Ordering	<p>Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and the conclusions, e.g., by using a visual fraction model.</p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - <i>Model</i> with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.OA.4. Find all factor pairs for a whole number in range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.</p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NF.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - <i>Model</i> with mathematics. 4. MP.7 - Look for and make use of structure. 4. MP.8 - Look for and express regularity in repeated reasoning.</p>	<p>~How can the same fractional amount be named using symbols in different ways? ~How can fractions be compared and ordered?</p> 	<ol style="list-style-type: none"> 1. I can learn how to factor whole numbers. 2. I can learn to identify prime and composite numbers. 3. I can find the multiples of a number. 4. I can use models and computation to show equivalent fractions. 5. I can use a number line to identify and write equivalent fractions. 6. I can use benchmark fractions to compare fractions with unlike denominators. 7. I can use common denominators and equivalent fractions to order fractions with unlike denominators. Write to explain whether an answer is correct or not. 	<ul style="list-style-type: none"> • denominator • numerator • benchmark fraction • equivalent fractions • prime number • composite number
Topic 12 Adding and Subtracting	AZ CC Standard: 4.NF.3.	~What does it mean to add and subtract fractions		<ul style="list-style-type: none"> • mixed number

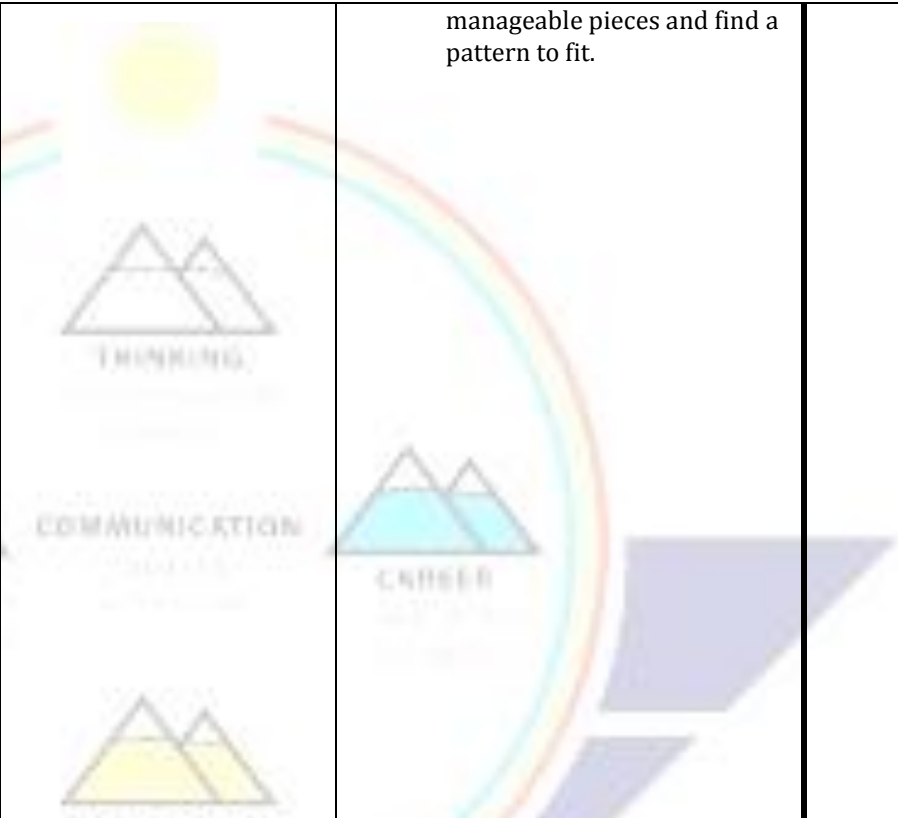
Fractions and Mixed Numbers With Like Denominators	<p>Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>4. <i>MP.8</i> - Look for and express regularity in repeated reasoning.</p> <p>4. NF.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>4. NF.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$ etc.</p> <p>4. NF.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and / or by using properties of operations and the relationship between addition and subtraction.</p> <p>4. NF.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p>	<p>and mixed numbers with like denominators?</p> <p>~What is a standard procedure for adding and subtracting fractions and mixed numbers with like denominators?</p> <p>~How can fractions and mixed numbers be added and subtracted on a number line?</p>	<ol style="list-style-type: none"> 1. I can use models to add fractions with like denominators. 2. I can use computational procedures to add fractions with like denominators and solve problems. 3. I can use models to subtract fractions with like denominators. 4. I can use computational procedures to subtract fractions with like denominators and solve problems. 5. I can use the number line to add and subtract fractions with like denominators. 6. I can identify and write mixed numbers as improper fractions and improper fractions as mixed numbers. 7. I can use models to add and subtract mixed numbers. 8. I can use models and computational procedures to add mixed numbers. 9. I can use models and computational procedures to subtract mixed numbers. 10. I can decompose fractions and represent them as compositions of fractions in a variety of ways. Draw a picture and write an equation to solve a problem. 	<ul style="list-style-type: none"> • improper fraction
Topic 13 Extending Fraction Concepts	AZ CC Standard: 4.NF.4.	~How is decimal numeration related to	<ol style="list-style-type: none"> 1. I can use unit fractions and multiplication to describe 	<ul style="list-style-type: none"> • unit fraction • decimal point


<p>Resources</p> <p>~Scott-Foreman-Addison Wesley end-Vision Math and its Components</p> <p>~envision Math Website @ www.pearsonaccessnet.com</p> <p>~Accelerated Math Program Renaissance Place, Real Time</p> <p>~ATI- Galileo Quarterly Benchmark Assessments</p> <p>~FASTT Math</p> <p>~Buckle Down AIMS Test Preparation</p> <p>~Workbook: Step-by-Step Model Drawing Book</p>	<p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>4. <i>MP.8</i> - Look for and express regularity in repeated reasoning.</p> <p>4. NF.4a. Understand a fraction a/b as a multiple of $1/b$. <i>For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</i></p> <p>4. NF.4b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. <i>For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$)</i></p> <p>4. NF.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. <i>For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i></p> <p>AZ CC Standard: 4.NF.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.</p>	<p>whole number numeration?</p> <p>~How can decimals be compared and ordered?</p> <p>~How are fractions and decimals related?</p> 	<p>fractions that are multiples of the unit fractions.</p> <ol style="list-style-type: none"> I can multiply a fraction by a whole number using models. I can multiply a whole number and a fraction to solve problems. I can understand how to write fractions as decimals and decimals as fractions. I can learn to locate and name fractions and decimals on a number line. I can understand how to use equivalent fractions to write fractions as decimals. I can use models and place-value charts to represent decimals to hundredths. Read and write decimals in expanded, standard, and word form. I can use models and place-value charts to compare decimals to hundredths. Use greater-than and less-than symbols to order decimals numbers. I can use place-value charts to read, write, and compare decimals in tenths and hundredths using money. Solve problems using the strategy Draw a Picture. 	<ul style="list-style-type: none"> hundredth tenth
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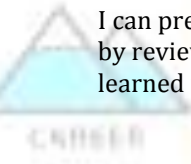
	<p><i>For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.</i></p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NF.6. Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.NF.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit, record measurement equivalents in a two-column table. <i>For example, know that 1 ft is 12 times as long as a 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).</i></p> <p>4. MP.2 - Reason abstractly and quantitatively.</p>		
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	<p>4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision. AZ CC Standard: 4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and 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. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>4. MP.1 - Make sense of problems and persevere in solving them. 4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision.</p>			
3rd Quarter Topics 14 – 16	January 2016 to March 2016			
Topic 14 Measurement Units and Conversion	<p>AZ CC Standard: 4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit, record measurement equivalents in a two-column table. <i>For example, know that 1 ft is 12 times as long as a 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).</i></p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision. AZ CC Standard: 4.MD.2.</p>	~What are customary and metric units for measuring length, capacity, and weight/mass, and how are they related?	<ol style="list-style-type: none"> 1. I can estimate and measure length by choosing the most appropriate unit of length. 2. I can estimate fluently with customary capacity units (cups, pints, quarts, and gallons). Compare the relative sizes of capacity measurements. 3. I can estimate fluently and measure with units of weight. 4. I can convert between customary units. 5. I can solve and explain the answers to each problem in writing. 6. I can estimate and measure length to the nearest 	<ul style="list-style-type: none"> • inch • foot • yard • mile • capacity • weight • ounce • pound • ton • millimeter • centimeter • decimeter • meter • kilometer • milliliter • liter • mass

	<p>Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and 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. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p>		<p>centimeter, and choose the most appropriate metric unit for measuring length.</p> <ol style="list-style-type: none"> I can estimate fluently with milliliters and liters. Measure capacity using these metric units. I can estimate and measure with units of mass – grams and kilograms. I can convert between metric units. I can compare several different units of time and freely convert from one unit of time to another. Solve problems that require finding the original times, measurements, or quantities that led to a result that is given. 	<ul style="list-style-type: none"> gram kilogram
Topic 15 Solving Measurement Problems	<p>AZ CC Standard: 4.MD.2.</p> <p>Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and 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. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>AZ CC Standard: 4.MD.3.</p>	<p>~What do area and perimeter mean and how can each be found?</p> <p>~How can line plots and other tools help to solve measurement problems?</p>	<ol style="list-style-type: none"> I can use the formulas for the perimeter and area of rectangles to solve real-world problems. I can use diagrams to show data and analyze how the quantities are related to solve real-world measurement problems. I can solve real-world problems that involve money and giving change by counting. I can construct line plots using given data and use the line plot to answer questions about the data set. Break a problem into smaller, more 	<ul style="list-style-type: none"> perimeter area line plot

	<p>Apply the area and perimeter formulas for rectangles in real world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor</i></p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision. 4. MP.7 - Look for and make use of structure.</p> <p>AZ CC Standard: 4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p> <p>4. MP.2 - Reason abstractly and quantitatively. 4. MP.4 - Model with mathematics. 4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision.</p>		manageable pieces and find a pattern to fit.	
Topic 16 Lines, Angles, and Shapes	<p>AZ CC Standard: 4.G.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p> <p>4. MP.5 - Use appropriate tools strategically. 4. MP.6 - Attend to precision.</p> <p>AZ CC Standard: 4.G.2. 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.</p>	<p>~How can lines, angles, and shapes be described, analyzed, and classified? ~How are angles measured, added and subtracted?</p>	<ol style="list-style-type: none"> 1. I can identify and describe points, lines, and planes. 2. I can learn geometric terms to describe parts of lines and types of angles. 3. I can use unit angles and fractions of a circle to find angle measures. 4. I can use a smaller angle to measure a larger angle by repeating the unit. 5. I can measure and draw angles. 	<ul style="list-style-type: none"> • point • line • plane • parallel lines • intersecting lines • perpendicular lines • line segment • ray • angle • right angle • acute angle • obtuse angle • straight angle

<p>Recognize right triangles as a category, and identify right triangles.</p> <p>AZ CC Standard: 4.G.3.</p> <p>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 matching parts. Identify line-symmetric figures and draw lines of symmetry.</p> <p>4. <i>MP.4</i> - Model with mathematics.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.MD.5.a.</p> <p>An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.MD.5.b.</p> <p>An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>4. <i>MP.7</i> - Look for and make use of structure.</p> <p>AZ CC Standard: 4.MD.6.</p> <p>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measures.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.5</i> - Use appropriate tools strategically.</p> <p>4. <i>MP.6</i> - Attend to precision.</p> <p>AZ CC Standard: 4.MD.7.</p> <p>Recognize angle measure as additive. When an angle is decomposed into no-overlapping parts, the angle measure of the whole is the</p>		<ol style="list-style-type: none"> 6. I can find unknown angle measures by adding and subtracting. 7. I can learn to identify polygons. 8. I can learn to identify and classify triangles. 9. I can learn to identify quadrilaterals. 10. I can determine if a plane figure has line symmetry and, if so, how many lines of symmetry it has. 11. I can solve problems by making and testing generalizations. 	<ul style="list-style-type: none"> • degree • unit angle • angle measure • protractor • polygon • side • vertex • triangle • quadrilaterals • pentagon • hexagon • octagon • equilateral triangle • isosceles triangle • scalene triangle • right triangle • acute triangle • rhombus • trapezoid • obtuse triangle • parallelogram • rectangle • square • symmetric • line of symmetry
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	<p>sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.</p> <p>4. <i>MP.1</i> - Make sense of problems and persevere in solving them.</p> <p>4. <i>MP.2</i> - Reason abstractly and quantitatively.</p> <p>4. <i>MP.4</i> - <i>Model</i> with mathematics.</p> <p>4. <i>MP.6</i> - Attend to precision.</p>			
4th Quarter	March 2016 to May 2016			
Resources ~Navigating Through Discrete Mathematics in the Kindergarten – Grade 5 ~Scott-Foresman-Addison Wesley en-Vision Math and its Components ~enVision Math Website @ www.pearsonsuccessnet.com ~Accelerated Math Program Renaissance Place, Real Time ~ATI- Galileo Quarterly Benchmark Assessments ~FASTT Math	Vertex Edge Graphs (4) Systematic Listing and Counting (4) AIMS Test Preparation (Review topics 1-16) AIMS Test Administration Reteach Topics 1-16 Set-Up to Grade 5 Lessons		 <p>I can prepare for AIMS Tests by reviewing concepts I learned in topics 1-16.</p>	

~Buckle Down AIMS Test Preparation ~Workbook: Step-by-Step Model Drawing Book				

