

# Ganado Unified School District

## (Math/5<sup>th</sup> Grade)

### PACING Guide SY 2014-2015

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
<p><b><u>QUARTER 1:</u></b></p> <p>Envision Math Resources Topic 1: Place Value</p> <p>-Step-By-Step Model Drawing Strategy -Accelerated Math Program -ATI/Galileo Program</p>	<p><b>5.NBT.1.</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p><b>5.NBT.3.</b> Read, write, and compare decimals to thousandths.</p> <p>a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., <math>347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)</math>.</p> <p>b. Compare two decimals to thousandths 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>	<ul style="list-style-type: none"> <li>• How do I recognize that a multi digit number, a digit in one place represents 10 times as much as its represents in the place to its right?</li> <li>• How do I recognize that a multi digit number, a digit in one place represents 1/10 of what it represents in the place to its left?</li> <li>• How do I read, write, and compare decimals to thousandths using base-ten numerals, number names, and expanded form?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Recognize that a multi-digit number, a digit in one place represents 10 times as much as it represents 1/10 of what it represents in the place to the left.</li> <li>• Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.</li> <li>• Compare two decimals to thousandths 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-digit number</li> <li>• Digit</li> <li>• Thousandths</li> <li>• Compare</li> <li>• Decimals</li> <li>• Base-Ten Numerals</li> <li>• Number Names</li> <li>• Expanded Forms</li> </ul>

		<ul style="list-style-type: none"> <li>How do I compare decimals to thousandths 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.</li> </ul>		
<p>Envision Math Resources Topic 2: Adding &amp; Subtracting Decimals</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program</p>	<p><b>5.NBT.4.</b> Use place value understanding to round decimals to any place.</p> <p><b>5.NBT.7.</b> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<ul style="list-style-type: none"> <li>How do I use place value understanding to round decimals to any place?</li> <li>How do I add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings based on place value, properties of operations, and/or the relationship between additions and subtractions?</li> <li>How do I relate a strategy to a written method and explain the reasoning used?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>Use place value understanding to round decimals to any place.</li> <li>Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on _____ (place value, properties of operations, relationship between addition and subtraction)</li> <li>Relate a strategy to a written model and explain the reasoning used.</li> </ul>	<ul style="list-style-type: none"> <li>Rounding</li> <li>Decimals</li> <li>Place</li> <li>Hundredth</li> <li>Concrete Models</li> <li>Concrete Drawings</li> <li>Strategies</li> <li>Place Value</li> <li>Relationship</li> <li>Written Method</li> <li>Reasoning</li> </ul>

<p>-Envision Math Resources Topic 3:</p> <p>Multiplying Whole Numbers -Step-By-Step Model</p> <p>Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program</p>	<p><b>5.NBT.2</b> Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p><b>5.NBT.5</b> Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p><b>5.NBT.6</b> Find whole-number quotients of whole numbers with up to four-digit dividends and two-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 area models.</p> <p><b>5.OA.1</b> Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p> <p><b>5.OA.2</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>.</i></p>	<ul style="list-style-type: none"> <li>• How do I explain patterns in the number of zeroes of the product when multiplying numbers by powers of 10?</li> <li>• How do I explain patterns in placement of the decimal point when a decimal is multiplied or divided by a power of 10?</li> <li>• How do I use whole number exponents to denote powers of 10?</li> <li>• How do I multiply multi-digit whole numbers using standard algorithm?</li> <li>• How do I find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10.</li> <li>• Explain patterns in the placement of decimals point when a decimal is multiplied or divided by a power of 10.</li> <li>• Use whole-number exponents to denote powers of 10.</li> <li>• Fluently multiply multi-digit whole numbers using standard algorithm.</li> <li>• Find whole-number quotients of the whole numbers with up to four-digit dividends and two digit-divisors, using strategies based on _____ (place value, properties of operations, the relationship between multiplication and division).</li> <li>• Illustrate and explain the calculation by using equations, rectangular arrays, and or area models.</li> <li>• Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</li> <li>• Write simple expressions that record calculations with numbers, and interpret</li> </ul>	<ul style="list-style-type: none"> <li>• Patterns</li> <li>• Product</li> <li>• Multiplying</li> <li>• Powers of 10</li> <li>• Whole Numbers</li> <li>• Exponents</li> <li>• Denotes</li> <li>• Fluently</li> <li>• Multi-digit</li> <li>• Standard Algorithm</li> <li>• Quotient</li> <li>• Four-Digit</li> <li>• Dividends</li> <li>• Two-Digit</li> <li>• Divisors</li> <li>• Strategies</li> <li>• Place Value</li> <li>• Properties of Operations</li> <li>• Multiplication</li> <li>• Division</li> <li>• Illustrate</li> <li>• Calculations</li> <li>• Equations</li> <li>• Rectangular Arrays</li> <li>• Area Models</li> <li>• Parentheses</li> <li>• Brackets</li> <li>• Braces</li> <li>• Numerical Expressions</li> <li>• Interpret</li> </ul>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p><i>Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</i></p>	<p>the relationship between multiplication and division?</p> <ul style="list-style-type: none"> <li>• How do I illustrate and explain the calculation by using equations, rectangular arrays, and/or area models?</li> <li>• How do I use parentheses, brackets, or braces in numerical expressions and evaluate expressions with these symbols?</li> <li>• How do I write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them?</li> </ul>	<p>numerical expressions without evaluating them.</p>	<ul style="list-style-type: none"> <li>• Evaluate</li> </ul>
<p>Envision Math Resources Topic 4: Dividing by 1-Digit Divisors</p>	<p><b>5.NBT.6.</b> Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and</p>	<ul style="list-style-type: none"> <li>• How do I find whole-number quotients of whole numbers with up to four-digit dividends and two-digit</li> </ul>	<ul style="list-style-type: none"> <li>• Find whole-number quotients of the whole numbers with up to four-digit dividends and two digit-divisors, using strategies based on _____ (place value, properties of operations,</li> </ul>	<ul style="list-style-type: none"> <li>• Whole-Number Quotients</li> <li>• Four-Digit Dividends</li> <li>• Two-Digit Divisors</li> <li>• Place Value</li> </ul>

<p>-Double Division Strategy -Step-By-Step Model Drawing Strategy -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p>division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>5.OA.2.</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</i></p>	<p>divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division?</p> <ul style="list-style-type: none"> <li>• How do I write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them?</li> </ul>	<p>the relationship between multiplication and division).</p> <ul style="list-style-type: none"> <li>• Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.</li> </ul>	<ul style="list-style-type: none"> <li>• Properties of Operations</li> <li>• Simple Expressions</li> <li>• Calculations</li> <li>• Numerical Expressions</li> <li>• Evaluating</li> </ul>
<p>Envision Math Resources Topic 5: Dividing by 2-Digit Divisors</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.NBT.6.</b> Find whole-number quotients of whole numbers with up to four-digit dividends and two-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 area models.</p>	<ul style="list-style-type: none"> <li>• How do I find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division?</li> </ul>	<ul style="list-style-type: none"> <li>• Find whole-number quotients of the whole numbers with up to four-digit dividends and two digit-divisors, using strategies based on _____ (place value, properties of operations, the relationship between multiplication and division).</li> </ul>	<ul style="list-style-type: none"> <li>• Whole-Number Quotients</li> <li>• Four-Digit Dividends</li> <li>• Two-Digit Divisors</li> <li>• Place Value</li> <li>• Properties of Operations</li> </ul>

# Ganado Unified School District

## (Math/5<sup>th</sup> Grade)

### PACING Guide SY 2014-2015

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
<p><b><u>QUARTER 2:</u></b> Envision Math Resources Topic 6: Multiplying Decimals</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.NBT.1.</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p><b>5.NBT.2.</b> Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p><b>5.NBT.7.</b> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<ul style="list-style-type: none"> <li>• How do I recognize that a multi digit number, a digit in one place represents 10 times as much as its represents in the place to its right?</li> <li>• How do I explain patterns in the number of zeroes of the product when multiplying numbers by powers of 10?</li> <li>• How do I explain patterns in placement of the decimal point when a decimal is multiplied or divided by a power of 10?</li> <li>• How do I use whole number exponents to denote powers of 10?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Recognize that a multi-digit number, a digit in one place represents 10 times as much as it represents 1/10 of what it represents in the place to the left.</li> <li>• Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10.</li> <li>• Explain patterns in the placement of decimals point when a decimal is multiplied or divided by a power of 10.</li> <li>• Use whole-number exponents to denote powers of 10.</li> <li>• Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on _____ (place value, properties of operations, relationship between addition and subtraction)</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-digit number</li> <li>• Digit</li> <li>• Patterns</li> <li>• Product</li> <li>• Multiplying</li> <li>• Powers of 10</li> <li>• Whole Numbers</li> <li>• Exponents</li> <li>• Denotes</li> <li>• Fluently</li> <li>• Thousandths</li> <li>• Compare</li> <li>• Decimals</li> <li>• Base-Ten Numerals</li> <li>• Number Names</li> <li>• Expanded Forms</li> <li>• Hundredth</li> <li>• Concrete Models</li> <li>• Concrete Drawings</li> <li>• Strategies</li> <li>• Place Value</li> <li>• Relationship</li> <li>• Written Method</li> </ul>

		<ul style="list-style-type: none"> <li>• How do I add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and drawings based on place value, properties of operations, and/or the relationship between additions and subtractions?</li> <li>• How do I relate a strategy to a written method and explain the reasoning used?</li> </ul>	<ul style="list-style-type: none"> <li>• Relate a strategy to a written model and explain the reasoning used.</li> </ul>	<ul style="list-style-type: none"> <li>• Reasoning</li> </ul>
<p>Envision Math Resources Topic 7: Dividing Decimals</p> <p>-Step-By-Step Model Drawing Strategy -Accelerated Math Program -ATI/Galileo Program</p>	<p><b>5.NBT.1</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and <math>\frac{1}{10}</math> of what it represents in the place to its left.</p> <p><b>5.NBT.2</b> Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.</p>	<ul style="list-style-type: none"> <li>• How do I recognize that a multi digit number, a digit in one place represents 10 times as much as its represents in the place to its right?</li> <li>• How do I explain patterns in the number of zeroes of the product when multiplying numbers by powers of 10?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Recognize that a multi-digit number, a digit in one place represents 10 times as much as it represents <math>\frac{1}{10}</math> of what it represents in the place to the left.</li> <li>• Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10.</li> <li>• Explain patterns in the placement of decimals point</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-digit number</li> <li>• Digit</li> <li>• Thousandths</li> <li>• Compare</li> <li>• Decimals</li> <li>• Base-Ten Numerals</li> <li>• Number Names</li> <li>• Expanded Forms</li> <li>• Patterns</li> <li>• Product</li> <li>• Multiplying</li> <li>• Powers of 10</li> <li>• Whole Numbers</li> </ul>

<p>-FASTT Math</p>	<p>Use whole-number exponents to denote powers of 10.</p> <p><b>5.NBT.7</b> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<ul style="list-style-type: none"> <li>• How do I explain patterns in placement of the decimal point when a decimal is multiplied or divided by a power of 10?</li> </ul>	<p>when a decimal is multiplied or divided by a power of 10.</p>	<ul style="list-style-type: none"> <li>• Exponents</li> <li>• Denotes</li> <li>• Fluently</li> </ul>
<p>Envision Math Resources Topic 8: Numerical Expressions, Patterns, and Relationship</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.OA.1</b> Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p> <p><b>5.OA.2</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product. 5.MP.2. Reason abstractly and quantitatively.</i></p> <p><b>5.OA.3</b> Generate two numerical patterns using two given rules. Identify apparent relationships between</p>	<ul style="list-style-type: none"> <li>• How do I use parentheses, brackets, or braces in numerical expressions?</li> <li>• How do I evaluate expressions with symbols (parentheses, brackets, braces)?</li> <li>• How do I write simple expressions that record calculations with numbers?</li> <li>• How do interpret numerical expressions without evaluating them?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Use parentheses, brackets, or braces in numerical expressions?</li> <li>• Evaluate expressions with symbols (with parentheses, brackets, braces).</li> <li>• Write simple expressions that record calculations with numbers?</li> <li>• Interpret numerical expressions without evaluating them.</li> <li>• Generate two numerical patterns using two given rules.</li> <li>• Identify relationships between corresponding terms.</li> <li>• Form ordered pairs consisting of corresponding terms from two patterns.</li> <li>• Graph ordered pairs on coordinate plane.</li> </ul>	<ul style="list-style-type: none"> <li>• Parentheses</li> <li>• Brackets</li> <li>• Braces</li> <li>• Numerical Expressions</li> <li>• Evaluate</li> <li>• Symbols</li> <li>• Calculations</li> <li>• Simple Expressions</li> <li>• Numerical Patterns</li> <li>• Relationships</li> <li>• Corresponding Terms</li> <li>• Ordered Pairs</li> <li>• Coordinate Plane</li> </ul>



	<p>corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i></p>	<ul style="list-style-type: none"> <li>• How do I generate two numerical patterns using two given rules?</li> <li>• How do I identify relationships between corresponding terms?</li> <li>• How do I form ordered pairs consisting of corresponding terms from two patterns?</li> <li>• How do I graph the ordered pairs on coordinate plane?</li> </ul>		
<p>Topic 9: Adding and Subtracting Fractions Envision Math Resources  -Step-By-Step Model Drawing Strategy -Accelerated Math</p>	<p><b>5.NF.1</b> Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, <math>\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}</math>. (In general, <math>\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}</math>.)</i></p> <p><b>5.NF.2</b> Solve word problems involving addition and subtraction of fractions referring to the same whole, including</p>	<ul style="list-style-type: none"> <li>• How do I add and subtract fractions with unlike denominators?</li> <li>• How do I solve word problems involving addition and subtraction of fractions referring to the same whole?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Add and subtract fractions with unlike denominators.</li> <li>• Solve word problems involving addition and subtraction of fractions referring to the same whole (including unlike denominators).</li> <li>• Use benchmark fractions and number sense of fractions to estimate mentally.</li> </ul>	<ul style="list-style-type: none"> <li>• Add</li> <li>• Subtract</li> <li>• Mixed Numbers</li> <li>• Unlike Denominators</li> <li>• Equivalent Fractions</li> <li>• Equivalent Sum</li> <li>• Difference</li> <li>• Fraction Models</li> <li>• Benchmark Fractions</li> </ul>

<p>Program -ATI/Galileo Program -FASTT Math</p>	<p>cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result <math>2/5 + 1/2 = 3/7</math>, by observing that <math>3/7 &lt; 1/2</math></i></p>	<ul style="list-style-type: none"> <li>• How I use benchmark fractions and number sense of fractions to estimate mentally and to check for reasonableness of answers?</li> </ul>	<ul style="list-style-type: none"> <li>• Check answers for reasonableness.</li> </ul>	<ul style="list-style-type: none"> <li>• Number Sense</li> <li>• Estimate</li> <li>• Mentally</li> <li>• Reasonableness</li> </ul>
<p>Envision Math Resources Topic 10: Adding and Subtracting Mixed Numbers  -Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.NF.1</b> Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, <math>2/3 + 5/4 = 8/12 + 15/12 = 23/12</math>. (In general, <math>a/b + c/d = (ad + bc)/bd</math>.)</i></p> <p><b>5.NF.2</b> Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result <math>2/5 + 1/2 = 3/7</math>, by observing that <math>3/7 &lt; 1/2</math></i></p>	<ul style="list-style-type: none"> <li>• How do I add and subtract fractions with unlike denominators?</li> <li>• How do I solve word problems involving addition and subtraction of fractions referring to the same whole?</li> <li>• How I use benchmark fractions and number sense of fractions to estimate mentally and to check for reasonableness of answers?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Add and subtract fractions with unlike denominators.</li> <li>• Solve word problems involving addition and subtraction of fractions referring to the same whole (including unlike denominators).</li> <li>• Use benchmark fractions and number sense of fractions to estimate mentally.</li> <li>• Check answers for reasonableness.</li> </ul>	<ul style="list-style-type: none"> <li>• Add</li> <li>• Subtract</li> <li>• Mixed Numbers</li> <li>• Unlike Denominators</li> <li>• Equivalent Fractions</li> <li>• Equivalent Sum</li> <li>• Difference</li> <li>• Fraction Models</li> <li>• Benchmark Fractions</li> <li>• Number Sense</li> <li>• Estimate</li> <li>• Mentally</li> <li>• Reasonableness</li> </ul>

# Ganado Unified School District

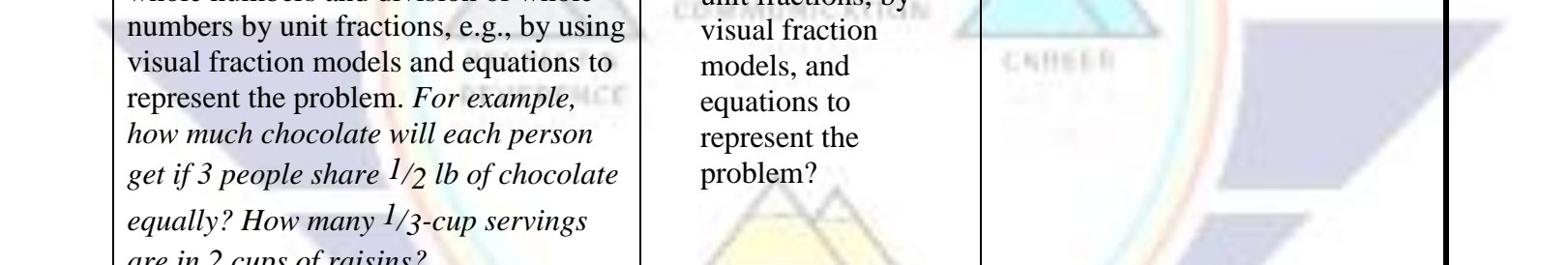
## (Math/5<sup>th</sup> Grade)

### PACING Guide SY 2014-2015


Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
<p><b><u>QUARTER 3:</u></b></p> <p>Envision Math Resources Topic 11: Multiplying and Dividing Fractions and Mixed Numbers</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.NF.3</b> Interpret a fraction as division of the numerator by the denominator (<math>a/b = a \div b</math>). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret <math>3/4</math> as the result of dividing 3 by 4, noting that <math>3/4</math> multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size <math>3/4</math>. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i></p> <p><b>5.NF.4</b> Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p>	<ul style="list-style-type: none"> <li>How do interpret fraction as division of the numerator by the denominator?</li> <li>How do I solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers?</li> <li>How do apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction?</li> <li>How I interpret the product <math>(a/b) \times q</math> as a parts of a partition of <math>q</math> into <math>b</math> equal parts,</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>Interpret a fraction as division of the numerator by the denominator.</li> <li>Solve word problems involving division of the whole numbers leading to answers in the form of fractions or mixed numbers.</li> <li>Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</li> <li>Interpret the product <math>(a/b) \times q</math> as a parts of a partition of <math>q</math> into <math>b</math> equal parts, as the result of a sequence of operations <math>a \times q/b</math>.</li> <li>Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret\</li> <li>Fractions</li> <li>Division</li> <li>Numerator</li> <li>Denominator</li> <li>Whole Numbers</li> <li>Fractions</li> <li>Mixed Numbers</li> <li>Equal Parts</li> <li>Sequence of Operations</li> <li>Rectangle</li> <li>Fraction Side</li> <li>Unit Square</li> <li>Tiling</li> <li>Scaling</li> <li>Resizing</li> <li>Product</li> <li>Factor</li> <li>Fraction Equivalence</li> <li>Quotients</li> <li>Visual Fraction Model</li> </ul>

	<p>a. Interpret the product <math>(a/b) \times q</math> as <math>a</math> parts of a partition of <math>q</math> into <math>b</math> equal parts; equivalently, as the result of a sequence of operations <math>a \times q \div b</math>. For example, use a visual fraction model to show <math>(2/3) \times 4 = 8/3</math>, and create a story context for this equation. Do the same with <math>(2/3) \times (4/5) = 8/15</math>. (In general, <math>(a/b) \times (c/d) = ac/bd</math>.)</p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths.</p> <p><b>5.NF.5</b> Interpret multiplication as scaling (resizing), by:</p> <p>a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the</p>	<p>as the result of a sequence of operations <math>a \times q/b</math>?</p> <ul style="list-style-type: none"> <li>• How do I find the area of a rectangle with the fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths?</li> <li>• How do I show that the area is the same as would be found by multiplying the side lengths?</li> <li>• How I interpret multiplication as scaling?</li> <li>• How do I multiply a given number by a fraction greater than 1 results in a product greater than the given number.</li> <li>• How do multiply a given number by a fraction less than 1 results in a product</li> </ul>	<ul style="list-style-type: none"> <li>• Show that the area is the same as would be found by multiplying the side lengths.</li> <li>• Interpret multiplication as scaling (resizing) to compare the size of a product to the size of one factor on the basis of the size of the other factor</li> <li>• Interpret multiplication as scaling (resizing) without comparing the size of a product to the size of one factor on the basis of the size of the other factor</li> <li>• Explain multiplying a given number by a fraction greater than 1 results in a product greater than the given number.</li> <li>• Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.</li> <li>• Relate the principle of fraction equivalence <math>a/b = (n \times a)/(n \times b)</math> to the effect of multiplying <math>a/b</math> by 1.</li> <li>• Solve real world problems involving multiplication of fractions and mixed numbers.</li> <li>• Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions?</li> </ul>	
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

	<p>given number; and relating the principle of fraction equivalence <math>a/b = (n \times a)/(n \times b)</math> to the effect of multiplying <math>a/b</math> by 1.</p> <p><b>5.NF.6</b> Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p> <p><b>5.NF.7</b> Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)</p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>For example, create a story context for <math>(1/3) \div 4</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>(1/3) \div 4 = 1/12</math> because <math>(1/12) \times 4 = 1/3</math>.</i></p>	<p>smaller than then the given number?</p> <ul style="list-style-type: none"> <li>• How do I relate the principle of fraction equivalence <math>a/b = (n \times a)/(n \times b)</math> to the effect of multiplying <math>a/b</math> by 1.?</li> <li>• How do I solve real world problems involving multiplication of fractions and mixed numbers?</li> <li>• How do I apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions?</li> <li>• How do I interpret division of a unit fraction by a non-zero whole number and compute such quotients?</li> </ul>	<ul style="list-style-type: none"> <li>• Interpret division of a unit fraction by non-zero whole number and compute such quotients?</li> <li>• Interpret division of a whole number by a unit fraction and compute such quotients?</li> <li>• Solve real world problems involving division of unit fractions by non-whole numbers and division of whole number: by unit fractions, by visual fraction models, and equations to represent the problem?</li> </ul>	
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

	<p>b. Interpret division of a whole number by a unit fraction, and compute such quotients. <i>For example, create a story context for <math>4 \div (1/5)</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>4 \div (1/5) = 20</math> because <math>20 \times (1/5) = 4</math>.</i></p> <p>c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally? How many <math>1/3</math>-cup servings are in 2 cups of raisins?</i></p>	<ul style="list-style-type: none"> <li>• How do interpret division of a whole number by a unit fraction and compute such quotients?</li> <li>• How do I solve real world problems involving division of unit fractions by non-whole numbers and division of whole number: by unit fractions, by visual fraction models, and equations to represent the problem?</li> </ul>		
<p>-Envision Math Resources Topic 12: Volume of Solids</p> <p>-Step-By-Step Model Drawing Strategy Workbooks</p>	<p><b>5.MD.3.</b> Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p> <p>a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.</p> <p>b. A solid figure, which can be packed without gaps or overlaps using <math>n</math> unit cubes, is said to have a volume of <math>n</math> cubic units.</p>	<ul style="list-style-type: none"> <li>• How I recognize volume as an attribute of solid figures and understand concepts of volume measurement?</li> <li>• How do I measure volumes by counting unit cubes, using cubic cm, cubic m,</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</li> <li>• Measure volumes by counting unit cubes, using cubic cm, cubic m, cubic ft, and improvised units.</li> <li>• Relate volume to the operations of multiplication and addition.</li> </ul>	<ul style="list-style-type: none"> <li>• Volume</li> <li>• Attribute</li> <li>• Solid Figures</li> <li>• Volume Measurement</li> <li>• Unit Cubes</li> <li>• Cubic Centimeter (cm)</li> <li>• Cubic Feet (ft)</li> <li>• Improvised Units</li> </ul>

<p>-Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.MD.4.</b> Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</p> <p><b>5.MD.5.</b> Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p> <p>b. Apply the formulas <math>V = l \times w \times h</math> and <math>V = b \times h</math> for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.</p> <p>c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p>	<p>cubic ft, and improvised units?</p> <ul style="list-style-type: none"> <li>• How do I relate volume to the operations of multiplication and addition?</li> <li>• How do I solve real world and mathematical problems involving volume?</li> </ul>	<ul style="list-style-type: none"> <li>• Solve real world and mathematical problems involving volume.</li> </ul>	<ul style="list-style-type: none"> <li>• Operations of Multiplication and Addition</li> <li>• Real World Problems</li> <li>• Mathematical Problems</li> </ul>
<p>Envision Math Resources Topic 13:</p>	<p><b>5.MD.1.</b> Convert among different-sized standard measurement units within a given measurement system (e.g.,</p>	<ul style="list-style-type: none"> <li>• How do I convert among different sized standard</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Convert among different sized standard measurement units</li> </ul>	<ul style="list-style-type: none"> <li>• Convert</li> <li>• Standard Measurement Units</li> </ul>

<p>Units of Measure</p> <p>-Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p>convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p>	<p>measurement units within a given measurement system?</p> 	<p>within a given measurement system.</p>	
<p>Topic 14: Data Envision Math Resources -Step-By-Step Model Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.MD.2.</b> Make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p> <p><b>5.G.2.</b> Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<ul style="list-style-type: none"> <li>• How do I make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, and <math>\frac{1}{8}</math>)?</li> <li>• How do I use operations on fractions to solve problems involving information presented in line plots?</li> <li>• How do show real world and mathematical problems by graphing points in</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Make a line plot to display a set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, and <math>\frac{1}{8}</math>).</li> <li>• Use operations on fractions to solve problems involving information presented in line plots.</li> <li>• Show real world problems by graphing points in the first quadrant of the coordinate plane.</li> <li>• Interpret coordinate values of points in the context of the situation.</li> </ul>	<ul style="list-style-type: none"> <li>• Line Plot</li> <li>• Unit</li> <li>• Operations</li> <li>• Real World Problems</li> <li>• Quadrant</li> <li>• Coordinate Plane</li> <li>• Coordinate Values</li> <li>• Context of the Situation</li> </ul>



		<p>the first quadrant of the coordinate plane?</p> <ul style="list-style-type: none"> <li>• How do interpret coordinate values of points in the context of the situation?</li> </ul>		
--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--



# Ganado Unified School District

## (Math/5<sup>th</sup> Grade)

### PACING Guide SY 2014-2015

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
<p><b><u>QUARTER 4:</u></b></p> <p>Envision Math Resources -Topic 15: Classifying Plane Figures</p> <p>- Step-By-Step Model -Drawing Strategy Workbooks -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p><b>5.G.3.</b> Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p> <p><b>5.G.4.</b> Classify two-dimensional figures in a hierarchy based on properties.</p>	<ul style="list-style-type: none"> <li>• How do I understand that the attributes from one category of two-dimensional figures also belong to all subcategories of that category?</li> <li>• How do I classify two-dimensional figures by properties?</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Understand that the attributes belonging to a category of two dimensional figures also belong to all subcategories of that category?</li> <li>• Classify two-dimensional figures in a hierarchy based on properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Attributes</li> <li>• Category</li> <li>• Two-Dimensional Figures</li> <li>• Subcategory(ies)</li> <li>• Properties</li> </ul>
<p>Envision Math Resources</p>	<p><b>5.G.1.</b> Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection</p>	<ul style="list-style-type: none"> <li>• How do I use a pair of perpendicular number lines to</li> </ul>	<p>I will be able to:</p> <ul style="list-style-type: none"> <li>• Use a pair of perpendicular number lines to define a</li> </ul>	<ul style="list-style-type: none"> <li>• Perpendicular Number Lines</li> <li>• Coordinate System</li> </ul>

<p>Topic 16: Coordinate Geometry</p> <p>-Step-By-Step Model Drawing Strategy -Accelerated Math Program -ATI/Galileo Program -FASTT Math</p>	<p>of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., <math>x</math>-axis and <math>x</math>-coordinate, <math>y</math>-axis and <math>y</math>-coordinate).</p> <p><b>5.G.2.</b> Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p> <p><b>5.OA.3.</b> Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the</i></p>	<p>define a coordinate system?</p> <ul style="list-style-type: none"> <li>• How I represent real world and mathematical problems by graphing points in the first quadrant of the coordinate point?</li> <li>• How do interpret values of points in the context of the situation?</li> <li>• How do generate two numerical patterns using two given rules?</li> <li>• How do I generate two numerical patterns using two given rules?</li> <li>• How do I identify apparent relationships between corresponding terms?</li> </ul>	<p>coordinate system using point and line reference(s).</p> <ul style="list-style-type: none"> <li>• Show real world and mathematical problems by graphing points in the first quadrant of the coordinate point?</li> <li>• Interpret values of points in the context of the situation.</li> <li>• Generate two numerical patterns using two given rules.</li> <li>• Generate two numerical patterns using two given rules.</li> <li>• Identify apparent relationships between corresponding terms.</li> </ul>	<ul style="list-style-type: none"> <li>• Real World Problems</li> <li>• Mathematical Problems</li> <li>• Coordinate Point</li> <li>• Values</li> <li>• Context</li> <li>• Numerical Patterns</li> <li>• Apparent Relationships</li> <li>• Corresponding Terms</li> </ul>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p><i>corresponding terms in the other sequence. Explain informally why this is so.</i></p>	<ul style="list-style-type: none"> <li>• How do I form ordered pairs consisting of corresponding terms from two patterns?</li> <li>• How do I graph the ordered pairs on a coordinate plane?</li> </ul>		
--	---------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--

