Ganado Unified School District #20
(Math/7th Grade)

PACING Guide SY 2018-2019

Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary Content/Academic
First Quarter				
Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http://www.math.aids.com/ **Assessment Technology Incorporated** Online:http://www.ati-online.com/ Kahoot.com	1. Pretest: Adding & subtracting with decimals and fractions. 2. Pretest: Multiplying & dividing with decimals and fractions. **7.NS.A.2d.** Convert a rational number to decimal form using long division; know that the decimal form of a rational number terminates in 0's or eventually repeats. **7.RP.A.3**. Use proportional relationships to solve multi-step ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error). **7.RP.A.1.** Compute unit rates associated with ratios involving both simple and complex fractions, including ratios of quantities measured in like or different units.	How are fraction, decimal, and percent values related to one another? How are percent values use in real-world applications?	How are fraction, decimal, and percent values related to one another? How are percent values use in real-world applications? Students will estimate a percent of a natural number using the percent equation. Students will find calculate sales tax and discounts of products. Students will evaluate finance applications using the simple interest formula	1) Fraction 2) Decimal 3) Terminating decimal 4) Repeating decimal 5) Equivalent fractions 6) Percent 7) Percent of change 8) Percent of increase 9) Percent of decrease 10) Principal 11) Interest 12) Interest rate 13) Simple interest 14) Commission 15) Gratuities 16) Markups 17) Markdowns 18) Decrease 19) Increase 20) ratio

| Math Build to the Common Core (Workbook) MC Graw Hill Education By: Carter, Cuevas, Et.Al Kutasoftware **Online:http://** www.kutasoftware.com/ | Pretest: Adding and Subtracting Integers. Pretest: Multiplying and Dividing Integers. **7.NS.A.1b.** Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world context. **7.NS.A.3.** Solve mathematical problems and problems in real-world context involving the four operations with rational numbers. Computations with rational numbers extend the rules for manipulating fractions to complex fractions where $a/b \div c/d$ when $a,b,c,$ and d are all integers and $b,c,$ and $d \neq 0$. **7.EE. B.3**. Solve multi-step mathematical problems and problems in real-world context posed with positive and negative rational numbers in any form. Convert between forms as appropriate and assess the reasonableness of answers. *For example, If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50 per hour.* | How are zero, positive , and negative numbers aligned ? How are both positive and negative numbers are calculated? | Students will add integers with same and different signs. Students will subtract integers with same and different signs. Students will model adding integers subtracting integers on the number line. | 1. Absolute value 2. Additive inverse 3. Integers 4. Positive number 5. Negative number 6. Zero 7. Opposites 8. Inverse 9. Rational numbers 10. Sum 11. Difference 12. Product 13. Quotient 14. Whole number 15. Natural number 16. Fraction 17. Numerator 18. Denominator 19. Estimate 20. Complex fraction 21. Convert 22. Distributive property |

	7.NS.A.1c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world context.		
	7.NS.A.2a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world context.		
	7.NS.A.2b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world context.		
	7.NS.A.2c. Apply properties of operations as strategies to multiply and divide rational numbers.		
	7.EE.A.2. Rewrite an expression in different forms, and understand the relationship between the different forms and their meanings in a problem context. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*		

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Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http://www.math.aids.com/ **Assessment Technology Incorporated Online:http://** www.ati-online.com/ **Math Build to the Common Core (Workbook) MC Graw Hill Education** By: Carter, Cuevas, Et.Al Kutasoftware **Online:http://** www.kutasoftware.com/	**7.NS.A1d**. Apply properties of operations as an strategies to add and subtract rational numbers. **7.NS.A.2c**. Apply properties of operations as strategies to multiply and divide rational numbers. **7.EE.A.1**. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7.EE.A.2.** Understand that rewriting an expression in different forms in a problem context can shed light on the problem end how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "incre by 5%" is the same as "multiply by 1.05."* **7.EE.B.4a.** Solve word problems leading to equations of the form $px+q = r$ and $p(x+q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	How are numerical and algebraic expressions evaluated with integers? How are word problems presented as an expressions? How many ways can an expression be presented? What does a variable represent? How can word problems be solved using expressions?	Students will evaluate numerical expressions using the rules of order of operations. Students will evaluate algebraic expressions using the substitution property. Students will write algebraic expression by translating verbal expressions.	1] Numerical expressions 2] Order of Operations 3) Algebraic expressions 4) Term S) Variable 6) Constant term 7) Coefficient term 8) Like terms 9) Distributive property 10) Evaluate 11) Verbal Phrase 12)Sum 13) More than 14) Increased by 15) Difference 16) Less than 17) Subtracted from 18) Decreased by 19) Product 20) Multiplied by 21) Quotient 22) Divided by

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| | numbers by describing real-world context.

7.EE.B.4b. Solve word problems leading to inequalities of the form $px+q > r$ or $px+q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. | | | |
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		Second Quarter		
Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http://www.math.aids.com/ **Assessment Technology Incorporated Online:http://** www.ati-online.com/ **Math Build to the Common Core (Workbook) MC Graw Hill Education** By: Carter, Cuevas, Et.Al	Pretest: Writing & Solving Proportions **7.RP.A.2a.** Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. **7.NS.A.3.** Solve real world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) **7.RP.A.1.** Compute unit rates associated with ratios involving both simple and complex fractions, including ratios of quantities measured in like or different units. **7.RP.A.2c.** Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*	Why are ratios important? How can measure units can from one form to another (e.g. how can inches change into centimeters or miles?)? Why are unit rates important to use in everyday activities? Why is proportion important when comparing objects?	Students will write rates and unit rates to compare two different quantities. Students will solve real-world applications using proportions. Students will use critical attributes to define similarity. Students will use ratios and proportions to create scale drawings.	1) Rate 2) Unit Rate 3) Equivalent Ratios 4) Proportion 5) Cross Product 6) Indirect measurement 7) Corresponding angles 8) Corresponding sides 9) Similar 10) Scale 11) Scale drawing Scale model

Ganado USD-PACING GUIDE (Mathematics/7'ʰ Grade)

Kutasoftware Online:http://www.kutasoftware.com/	**7.G.A.1**. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.			
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Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http://www.math.aids.com/ **Assessment Technology Incorporated** Online:http://www.ati-online.com/ **Math Build to the Common Core (Workbook) MC Graw Hill Education** By: Carter, Cuevas, Et.Al	a. Pretest: Identifying Proportions within a Table & Graph b. Pretest: Graphing equations using slope. **7.RP.A.2b**. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **7.RP.A.1**. Compute unit rates associated with ratios involving both simple and complex fractions, including ratios of quantities measured in like or different units. **7.RP.A.2.** . Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). **7.NS.A.2c**. Apply properties of operations as strategies to add and subtract rational numbers.	In what other ways can proportional relationships be presented? How are tables and graphs related to one another?	Students will graph proportional relationships. Students will determine proportional relationships using tables and graphs. Students will find the slope of a line using rates. Students will graph equations of direct variation.	1) Table 2) Graph 3) Coordinate pair 4) X-axis 5) Y-axis 6) Slope 7) Rise 8) Run 9) Direct variation 10] Constant of variation

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Kutasoftware **Online:http://** www.kutasoftware.com/	**7.RP.A.2d.** Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.			

Third Quarter

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Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http://www.math.aids.com/ **Assessment Technology Incorporated Online:http://www.ati-online.com/** **Math Build to the Common Core (Workbook) MC Graw Hill Education** By: Carter, Cuevas, Et.Al Kutasoftware **Online:http://www.kutasoftware.com/**	Pretest: Classifying Angles Pretest: Characteristics of a Triangle **7.G.B.5.** Use facts about supplementary, complementary, vertical, and adjacent angles in multi-step problem to write and solve a simple equations for an unknown angle in a figure. **7.G.A.2.** Draw geometric shapes with given conditions using a variety of methods. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. **7.EE.B.4a.** Solve word problems Ieading te equations of the form *px+q=r an*d *pax+qj=r,* vn,et e p, o, and *r* are specific rational numbers. Solve equations oI these forms fluently. Compare an algebraic solution tu an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of o rectangle is 54 cm. Its length is 6 cm. Want is its width?*	What are angles? What makes lines and angles unique? What are special characteristics of a triangle?	Students will identify angles within parallel and transversal lines . Students will find missing angle measurements.	1. Angle 2. Vertex 3. Right angle 4. Acute angle 5. Obtuse angle 6. Straight angle 7. Complementary angles 8. Supplementary angles 9. Parallel lines 10. Transversal 11. Perpendicular lines 12. Skew lines 13. Adjacent lines 14. Vertical angles 15. Alternate interior angles 16. Corresponding angles 17. Alternate exterior angles

	Standard	(HESS Matrix)		Content/Academic
Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al	a. Pretest: Finding the circumference and area of a circle	How are the outside and inside measurements of a circle found ?	Students will find the circumference and areas of a circle.	1. Radius
				2. Diameter
				3. Pi
	b. Pretest: Finding the volume and surface area of a 3 dimensional objects.			4. Circumference
		Why is the area for basic geometric shapes important?	Student will find the area and perimeter of two dimensional shapes.	5. Area
Math-Aids Online:http:// www.math.aids. com/				6. Length
	7.G.B.4. Understand and use the formulas for the area and circumference of a circle to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.			7. Base
				8. Area
		What is a :		9. Cylinder
		a. Cylinder		10. Prism
		b. Prism		11. Volume
		c. Triangular prism	Students will find the volume of three dimensional objects.	12. Surface area
Assessment Technology Incorporated Online:http:// www.ati-online.com/		d. Rectangular prism		13. Face
		e. Cone		14. Lateral area
	7.G.B.6. Solve mathematical problems and problems in a real-world context involving area of two-dimensional objects composed of triangles, quadrilaterals, and other polygons. Solve mathematical problems and problems in real-world context involving volume and surface area of three-dimensional objects composed of cubes and right prisms.	f. Sphere		15. Lateral face
		g. Rectangular pyramid		16. Net
		h. Triangular pyramid		17. vertex
Math Build to the Common Core (Workbook) MC Graw Hill Education By: Carter, Cuevas, Et.Al		How can we find the volume and surface area of a:		
		a. Cylinder		
		b. Prism		
		c. Triangular prism		
		d. Rectangular prism		
	7.EE.A.2. Solve multi-step mathematical problems and problems in real-world context posed with positive and negative rational numbers in any form. Convert between forms as appropriate and assess the reasonableness of answers. *For example, If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50 per hour.*	e. Cone		
		f. Sphere		
		g. Rectangular pyramid		
Kutasoftware Online:http:// www.kutasoftware.com/		h. Triangular pyramid		

	Describe the two-dimensional figures that result from slicing three-dimensional figures.			
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Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http:// www.math.aids. com/ **Assessment Technology Incorporated Online:http://** www.ati-online.com/	Review Assessment: Writing and Solving Expressions and Equations **7.EE.A.1**. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7EE.B.4. a**. Solve word problems leading to equations of the form $px+q = r$ and $p(x+q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. **7.EE.B.4b.** Solve word problems leading to inequalities of the form $px+q > r$ or $px+q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	How can one-step and two-step equations be solved? How can word problems be solved using equation?	Students will evaluate one-step equations using inverse operations. Students will evaluate two-step equations.	1. Equation 2. Expressions 3. Term 4. Variable 5. Constant term 6. Coefficient 7. Like terms 8. Distributive property 9. Evaluate

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<td colspan="5" align="center">**Fourth Quarter**</td>
Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al

Math-Aids Online:http:// www.math.aids. com/

Assessment Technology Incorporated Online:http:// www.ati-online.com/

Math Build to the Common Core (Workbook) MC Graw Hill Education By: Carter, Cuevas, Et.Al | a. Pretest: Constructing Box-and-Whisker Plots
b. Pretest: Interpreting Box-and-Whisker Plots

7.SP.B.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer thou the words in a chapter of a fourth grade Science book.*
7.SP.A.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge* | How are box-and-whisker plots created ?

How can box-and-whisker plots be useful in real world application? | Students will analyze and interpret box-and-whisker plots.

Students will compare and analyze sampling methods. | 1. Mean
2. Median
3. Mode
4. Range
5. Box-and-whisker plot
6. Lower quartile
7. Upper quartile
8. Interquartile range |

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Kutasoftware **Online:http://** www.kutasoftware.com/	*how far off the estimate or prediction might be.*			
	Pretest: Draw inference about population **7.SP.A.1.** Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	How can we tell recorded data is useful?	Students will draw inferences about a population with random sampling.	1. Population 2. Sample 3. Random sampling 4. Biased sampling 5. Convenience sampling.
Math Accelerated - A Pre-Algebra Program MC Graw Hill Education By: Carter, Cuevas, Et.Al **Math-Aids** Online:http:// www.math.aids.com/ **Assessment**	Pretest: Finding Probability **7.SP.C.5.** Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger number indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	Why is probability important ? How is probability used in everyday activities? How can data with probability represented?	Students will find experiments mental and theoretical probabilities with independent and dependent variables. Students will use probability to predict events.	1. Probability 2. Experiment 3. Trial 4. Event 5. Simple event 6. Compound event 7. Experimental probability 8. Sample space 9. Theoretical probability 10. Fair 11. Prediction

Technology Incorporated Online:http:// www.ati-online.com/ **Math Build to the Common Core (Workbook) MC Graw Hill Education** By: Carter, Cuevas, Et.Al **Kutasoftware Online:http://** www.kutasoftware.com/ **Kahoot.com**	**7.SP.C.6** Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.* **7.SP.C.8a.** Understand that, Just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. **7.SP.C.7b.** . Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?* **7.SP.C.8b.** Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.			

	7.SP.C.7a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*			
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Kutasoftware Online:http:// www.kutasoftware.com/			