Ganado Unified School District (Mathematics/Grade 8)

1st Quarter – ***August 2015-October 2015***

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
Week 1	**a. Pretest 1: Addition and Subtraction with Whole Numbers** **b. Pretest 2: Multiplication and Division** **c. Pretest 3: Rational and Irrational Numbers** 1. **8. NS.1:** Know that numbers are not rational are called irrational. Understand informally that every number has a decimal expansion for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational umber. 2. **8. NS.2:** Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions. *(Bell-ringer)* ***CC.8.EE.7:*** *Solve linear equations in one variable.* *Holt McDougal Resource pg. 26-32/300-314* *Prentice Hall Resource Review of pg.* *Buckle Down pg. 41-48* *Algebra 1 pg. 84-86* *Material worksheet*	**Study Guide/Review Assessment** ➢ Define and provide an example of a real numbers? ➢ Define and provide an example of an irrational number? ➢ Define and provide an example of a rational number? ➢ Explain how\do we organize numbers from least and greatest using a number line? ➢ How do identify whether a number is irrational or rational? ➢ How do you cite and develop a logical argument for irrational and rational numbers?	**Analyze: DOK Level 3:** Students will be able to use evidence to classify a given number as **irrational or rational**. **Evaluate: DOK Level 3:** Students will be able to develop logical argument for classifying irrational and rational numbers. **RESOURCE!** Holt McDougal Resource pg. Prentice Hall Resource pg. Buckle Down pg. 10-13/14-16/17-18/19-22 Algebra 1 pg. 73-8	**1) Real Numbers** **2) Rational Numbers** **3) Irrational Numbers** **4) Natural Numbers** **5) Whole Numbers** **6) Integers** **7) Fractions** **8) Repeating Decimal** **9) Terminating Decimal** **10) Radical** **11) Perfect Square Roots** **12) Exponents** **13) Absolute Value**

Week 2	**Pre-Assessment Exponents using A+plus** 1. **8. EE.1:** Know and apply the properties of integer exponents to generate equivalent numerical expressions. **Holt McDougal Resource pg. 92-94/96-100** **Prentice Hall Resource pg.** **Buckle Down pg. 32-34** **Algebra 1 pg. 435-456** **Material worksheet** 2. **8. EE.2:** Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares **Holt McDougal Resource pg. 112-115** **Prentice Hall Resource pg.** **Buckle Down pg. 49-50** **Algebra 1 pg. 435-456** **Material worksheet** *(Bell-ringer)* **CC.8.EE.7**: Solve linear equations in one variable. Holt McDougal Resource pg. 26-32/300-314 Prentice Hall Resource Review of pg. Buckle Down pg. 41-48 Algebra 1 pg. 84-86	**Study Guide/Review Assessment** ➢ Explain how to evaluate an expression with a negative exponent? ➢ Explain how to evaluate an expression with a zero exponent? ➢ Demonstrate how to raise a power to a power? ➢ Briefly explain how to simplify expressions using the order of operations?	**Apply: DOK Level 3:** Students will be able to demonstrate how to evaluate expressions with positive, negative, and zero exponents . **Analyze: DOK Level 3:** Students should be able to develop a logical an example for expressing numbers with positive, negative, and zero exponents.	**1) Power** **2) Radical** **3) Base Number** **4) Positive Exponents** **5) Negative Exponents** **6) Raising a power to power** **7) Perfect Squares** **8) Square Roots** **9) Cubic Roots** **10) Cube**

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)

Week 3	**Pre-Assessment Scientific Notations** 3. **8. EE.3:** Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much as one is than the other. **Holt McDougal Resource pg. 100-104** **Prentice Hall Resource pg.** **Buckle Down pg. 35-40** **Algebra 1 not available** **Material worksheet** 4. 8. EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g. use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. **Holt McDougal Resource pg. 105-108** **Prentice Hall Resource pg.** **Buckle Down pg. 35-40** **Algebra 1 not available** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment** ➢ What is a scientific notation? ➢ What is standard notation? ➢ Demonstrate how to convert scientific notations to standard notations? ➢ Model how to convert standard notations to scientific notations? ➢ Be able to recall rational and irrational numbers? ➢ Define a variable? ➢ Explain how to solve for a variable? ➢ Demonstrate how do we isolate a variable? ➢ What properties do we use when isolating a variable? ➢ Define evaluating? ➢ Explain how to evaluate an equation using the inverse operations? ➢ Define inverse? ➢ How do we use reciprocal? Use one of the Core 6 graphic organizers.	**Apply: DOK Level 3:** Students will be able to use evidence to explain how to express large and small numbers in scientific notations. **Apply: DOK Level 3:** Students will be able to use evidence and reasoning skills to explain how to express large and small numbers in scientific notations. **Analyze: DOK Level 3:** Students should be able to develop a logical argument for comparing two numbers written in scientific notations. Bell-work Ringer ***Analyze: DOK Level 3:*** *Students will be able to describe the process of how to solve linear equations using the suitable property.*	**1)** Powers **2)** Scientific Notations **3)** Standard Notations **4)** Variable **5)** Inverse Operations **6)** Coefficients **7)** Orders of Operations **8)** Evaluate **9)** Reciprocal **10)** Equivalent Operations

			OR **Create: DOK Level 3:** Students will be able to label and formulate a problem for a given situation using linear equations.	

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)

Week 4	**Pre-Assessment "Functions" A+plus** 5. 8. F.1: Understand at a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. **Holt McDougal Resource pg. 66-69** **Prentice Hall Resource pg.** **Buckle Down pg. 112-116** **Algebra 1 pg. 41-46** **Material worksheet** 6. 8. F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal description). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. **Holt McDougal Resource pg. 70-73** **Prentice Hall Resource pg.** **Buckle Down pg. 122-125** **Algebra 1 pg. 153-162/163-170** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment** ➢ What are likes terms? ➢ How do we combine like terms? ➢ How do we simplify expressions using like terms? ➢ What is the distributive property? Provide an example. ➢ How do we use the Distributive Property? Provided an example. ➢ Explain how do we use the Distributive Property to simplify expressions? ➢ Explain how do we use real world situations when solving linear equations? Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to compare, and contrast methods for solving linear equations. **Create: DOK Level 3:** Students will be able to use a given situation to formulate a linear equation.	1. Distributive property 2. Like terms 3. Terms 4. Equivalent expressions 5. Simplify 6. Variables 7. Expressions 8. Input 9. Output 10. Coordinates 11. Range 12. Domain

Week 5	**Post-Test Functions** 7. CC.8.F.3: Interpret the equation y= mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For examples, the unction A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2.4), and (3, 9), which are not on a straight line. **Holt McDougal Resource pg. 338-342** **Prentice Hall Resource pg.** **Buckle Down pg. 117-121** **Algebra 1 pg. 173-180/182-188** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment Question** 1. What is a rule? 2. What is a table? 3. How do you create a table? 4. What is an input/output value? 5. Why do we use domain/range instead of input/output? 6. How many ways can you represent a function? 7. How can you identify a function? 8. What is the vertical line test? Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to interpret data from complex graph and graph linear equations. **Evaluate: DOK Level 3:** Students will be able to cite evidence and develop a logical argument for concepts or solutions of graphing linear equations.	1. Function 2. Linear Equations 3. Linear Function 4. Function Table 5. Equations 6. Slope 7. Y-intercept 8. X-intercept 9. Vertical Line test 10. Positive Slope 11. Negative Slope 12. Zero Slope 13. Undefined Slope 14. Coordinates 15. Point-Slope form 16. X-intercept 17. Y-intercept 18. Slope-intercept form

Ganado Unified School District (Mathematics/Grade 8)

2nd Quarter – ***October 2015- December 2015***

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
Week 1	**Post Test Results & Continuation of Functions** 8. 8. F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal description). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. **Holt McDougal Resource pg. 70-73** **Prentice Hall Resource pg.** **Buckle Down pg. 122-125** **Algebra 1 pg. 153-162/163-170** **Material worksheet** 9. CC.8.F.3: Interpret the equation y= mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For examples, the unction A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2.4), and (3, 9), which are not on a straight line. **Holt McDougal Resource pg. 338-342** **Prentice Hall Resource pg.** **Buckle Down pg. 117-121** **Algebra 1 pg. 173-180/182-188** **Material worksheet** ***Bell-Ringer CC.8.EE.7b**: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment Questions** ➢ What is a rule? ➢ What is a table? ➢ How do you create a table? ➢ What is an input/output value? ➢ Why do we use domain/range instead of input/output? ➢ How many ways can you represent a function? ➢ How can you identify a function? ➢ What is the vertical line test? Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	**Evaluate: DOK Level 3:** Students will be able to cite evidence then develop a logical argument for graphing linear equations.	1. Function 2. Linear Equations 3. Linear Function 4. Function Table 5. Equations 6. Slope 7. Y-intercept 8. X-intercept 9. Vertical Line test 10. Positive Slope 11. Negative Slope 12. Zero Slope 13. Undefined Slope 14. Coordinates 15. Point-Slope form 16. X-intercept 17. Y-intercept 18. Slope-intercept form

Date	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
Week 2	**Continuation of Functions** 10. CC.8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. **Holt McDougal Resource pg. 345-349** **Prentice Hall Resource pg.** **Buckle Down pg. 126-130** **Algebra 1 pg. 191-197/200-206** **Material worksheet** 11. CC.8.F.5: Describe qualitatively the functional relationship by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally. **Holt McDougal Resource pg. 350-354/356-359** **Prentice Hall Resource pg.** **Buckle Down pg. 131-134** **Algebra 1 not available** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment** ➢ What is a slope? ➢ How do you know if a slope have positive or negative incline? ➢ What type of slope makes a horizontal? ➢ What type of slope makes a vertical line? ➢ What is slope intercept form? Give me an example... ➢ What is the vertical line test? Provide an example … ➢ How do I write an equation in slope intercept form? ➢ What is slope-intercept form? ➢ What is the x or y-intercept of an equation? ➢ How do I locate the x and y-intercept of an equation or graph? ➢ What is the point-slope form? Use one of the Core 6 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to describe, compare, and contrast solution methods for a complex function situation. **Create: DOK Level 3:** Students will be able to create a mathematical model for a complex function situation.	**Same As Previous Week** 1. Function 2. Linear Equations 3. Linear Function 4. Function Table 5. Equations 6. Slope 7. Y-intercept 8. X-intercept 9. Vertical Line test 10. Positive Slope 11. Negative Slope 12. Zero Slope 13. Undefined Slope 14. Coordinates 15. Point-Slope form 16. X-intercept 17. Y-intercept 18. Slope-intercept form

Date	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
	Week 3-8Quarter2: 12. CC.8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationship represented in different ways. **Holt McDougal Resource pg. 345-349** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 66-75** **Algebra 1 pg. 223-229/232-239** **Material worksheet** **Week 3-8Quarter2:** 13. CC.8.EE.6: Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b. **Holt McDougal Resource pg. 343-349** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 51-65** **Algebra 1 pg. 242-248/248-249/258-263** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment** ➢ How do you find the equations of a graphed function? ➢ How do I find the slope of a line using the given equation? ➢ How do I find the y-intercept of a line using an equation/graph? ➢ Why is it so important to remember the rules of I (isolate) I (inverse) B () B ()? Possibly a Venn diagram or using one of the Core 5 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to describe, compare, and contrast solution methods for sketching a graph. **Create: DOK Level 3:** Students will be able to create a proportional relationship for interpreting the unit rate of a slope.	**Same As Previous Week** 1. Function 2. Linear Equations 3. Linear Function 4. Function Table 5. Equations 6. Slope 7. Y-intercept 8. X-intercept 9. Vertical Line test 10. Positive Slope 11. Negative Slope 12. Zero Slope 13. Undefined Slope 14. Coordinates 15. Point-Slope form 16. X-intercept 17. Y-intercept 18. Slope-intercept form

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
	Pre Assessment_ 14. CC.8.EE.8c: Solve real-world and mathematical problems leading to two linear equations in two variables. **Holt McDougal Resource pg. 318-320/373** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 95-98** **Algebra 1 pg. 386-392** **Material worksheet** **Week 5 Quarter2:** 15. CC.8.EE.8: Analyze and solve pairs of simultaneous linear equations. **Holt McDougal Resource pg. 318-320/368-371/373** **Prentice Hall Resource Review of pg.** **Buckle Down pg.76-98** **Algebra 1 pg. 393-399** **Material worksheet** ***Bell-Ringer*** ***CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***	**Study Guide/Assessment** ➢ How may we use graphing systems of linear equations to solve real life situations? ➢ What are systems of equations? ➢ How do we solve systems of equations? ➢ What is the transitive property? ➢ How do we use the transitive property to solve systems of equations? ➢ How many solutions exist for systems of equations? ➢ How do we solve systems of equations by solving for a variable? ➢ How do we graph solving systems of equations for a given problem? ➢ Intersecting lines have how many solutions? ➢ Parallel lines have how many solutions? ➢ Same lines have how many solutions? ➢ How may we use graphing to solve systems of linear equations? Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to model how to solve systems of equations using addition, subtraction, and substitution. **Create: DOK Level 3:** Students will be able to apply concepts and skills from chapter 7 to demonstrate their knowledge and understanding of solving systems of equations.	**Vocabulary Words** 1. Systems of Equations 2. Solutions of Systems of Equations 3. No Solution 4. One Solution 5. Infinite Numbers of Solutions 6. Transitive Property 7. Substitution 8. Intersecting lines 9. Parallel Lines 10. Same lines

	Post-assessment 16. CC.8.EE.8a: Understand that solutions to a system of two equations in two variables correspond to points of intersection of their graphs. **Holt McDougal Resource pg. 318-320** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 76-84** **Algebra 1 pg. 369-375** **Material worksheet** 17. CC.8.EE.8b: Solve system of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. **Holt McDougal Resource pg. 318-320/368-371** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 76-84/85-94** **Algebra 1 pg. 377-383** **Material worksheet** ***Bell-Ringer CC.8.EE.7b****: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.* ***Holt McDougal Resource pg. 300-303/304-306*** ***Prentice Hall Resource Review of pg.*** ***Buckle Down pg. 41-48*** ***Algebra 1 pg. 104-108*** ***Material worksheet***		**Analyze: DOK Level 3:** Students will be able to demonstrate and describe how to solve systems of equations using addition, subtraction, and substitution. **Create: DOK Level 3:** Students will be able to create and demonstrate how to solve systems of equations using addition, subtraction, and substitution.	

Ganado Unified School District (Mathematics/Grade 8)

3rd Quarter – ***January 2016- March 2016***

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
Week 2 -3	**Week 2 Quarter 3** 1. CC.8.G.1: Verify experimentally the properties of rotations, reflections, and translations **Holt McDougal Resource pg. 226-230** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 178-182** **Algebra 1 pg. SR12-SR13** **Material worksheet** 2. 8.CC.G.2: Understand that a two dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. **Holt McDougal Resource pg. 226-230/239-243** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 183-186** **Algebra 1 not available** **Material worksheet**	➢ What is a transformation? ➢ Name and identify the types of transformations for Translation. ➢ What is the most common mistake people make when using translation? ➢ Name and identify the types of transformation for Rotation. ➢ In your opinion what is the most common mistake people make when using rotation? ➢ Name and identify the types of transformation that exist for reflection. ➢ What is the most common mistake people make when using reflection? ➢ What is a translation? ➢ What are the rules for translations? ➢ What is reflection? ➢ What are the rules for reflections? ➢ What is rotating? ➢ What are the rules for rotating a figure around the origin?	**Apply: DOK Level 2:** Students will be able to describe the process of how to use transformation using physical models, transparencies, or geometry. **Analyze: DOK Level 3:** Students will be able to describe, compare, and contrast solution method of congruent/similar figures.	1. Transformation 2. Image 3. Translation 4. Reflections 5. Rotation 6. Center of rotations 7. Coordinate Plane 8. Coordinates 9. X-axis 10. Y-axis 11. Origin 12. Figure 13. Degree 14. Similarity 15. Sequences 16. Congruence 17. Combination

Week 3	**Week 3 Quarter 3** 3. 8. CC.G.3: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. **Holt McDougal Resource pg. 239-243** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 168-177** **Algebra 1 not available** **Material worksheet** **Week 4 Quarter 3** 4. 8.CC.G.4: Understand that a two dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. **Holt McDougal Resource pg. 231-234/239-243** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 187-190** **Algebra 1 not available** **Material worksheet** ***Week 1 to 2 Quarter 3 – Bell-work*** *Solving Systems of Equations using Substitution and Addition.* **Resource pg. 377 Algebra 1 Textbook**	➢ How do you identify similar figures? ➢ How do you prove two figures are congruent? ➢ How do you identify a transformation from the original? ➢ Where is the original image? ➢ Are the two figures similar or congruent? ➢ Explain in detail the given transformations from the original. ➢ Explain the transformation sequences and the congruence. ➢ Explain whether the transformation is a combined transformation. ➢ Tell whether the two figures are similar or congruent. ➢ Tell whether the two figures are similar after a rotation. ➢ Find the sequences of transformations for a given figure.	**Apply: DOK Level 3:** Students will be able to analyze similarities/differences between a given transformation. **Analyze: DOK Level 3:** Students should be able to cite evidence a logical argument for concepts to prove a given sequences of combination.	

Week 4 - 5	**Week 4 Quarter 3** 5. CC.8.G.1a: Lines are taken to lines, and line segments to line segment of the same length. **Holt McDougal Resource pg. 231-235** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 178-182** **Algebra 1 pg. SR12-SR13** **Week 5 Quarter 3** 6. 8. CC.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal and the angle-angle criterion for similarity of triangles. **Holt McDougal Resource pg. 202-205** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 191-197** **Algebra 1 not available** **Material worksheet**	➢ What is an angle? ➢ Define a right angle, obtuse, straight, complementary, supplementary, adjacent, vertical, and congruent angles. ➢ Provide an example of right angle, obtuse, straight, complementary, supplementary, adjacent, vertical, and congruent angles.	**Analyze: DOK Level 3:** Students should be able to develop a logical argument for identifying parallel and perpendicular lines and the angles formed by a transversal.	1. Angle 2. Right Angle 3. Obtuse Angle 4. Straight Angle 5. Complementary Angles 6. Supplementary Angles 7. Adjacent Angles 8. Vertical Angles 9. Congruent Angles
Week 5	**Week 5 Quarter 3** 7. CC.8.G.1b: Angles are taken to angles of the same measure. **Holt McDougal Resource pg. 231-234** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 178-182** **Algebra 1 pg. SR12-SR13** **Material worksheet** **Week 5 Quarter 3** 8. CC.8.G.1c: Parallel lines are taken to parallel lines. **Holt McDougal Resource pg. 231 -234** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 178-182** **Algebra 1 pg. SR12-SR13** **Material worksheet**	➢ What is a transversal? ➢ What are parallel lines? ➢ What are perpendicular lines? ➢ What are alternate interior angles? ➢ What are alternate exterior angles? ➢ What are corresponding angles? ➢ How do you prove: a. Alternate interior angles? b. Alternate exterior angles? c. Corresponding angles? How do you find the measure of angles formed by transversal? Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	**Apply: DOK Level 3:** Students will be able to analyze and identify congruent angles formed by a transversal.	1. Parallel lines 2. Perpendicular lines 3. Transversal 4. Congruent 5. Angles 6. Point 7. Ray 8. Alternate interior angles 9. Alternate exterior angles 10. Corresponding angles

Week 7-8	9. 8. CC.G.6: Explain a proof of the Pythagorean Theorem and its converse. **Holt McDougal Resource pg. 132-135** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 154-157** **Algebra 1 not available** **Material worksheet** 10. 8. CC.G.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. **Holt McDougal Resource pg. 139-141** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 146-153/158-162** **Algebra 1 not available** **Material worksheet** 11. 8. CC.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. **Holt McDougal Resource pg. 139-141** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 168-171** **Algebra 1 not available** **Material worksheet**	➢ What is the Pythagorean Theorem? ➢ How do you use the Pythagorean Theorem? ➢ For which triangle do you use the Pythagorean Theorem? ➢ What is a hypotenuse? ➢ How do you find the length of a hypotenuse using the Pythagorean Theorem? ➢ How do you find the length of a hypotenuse to the nearest hundredth? ➢ How do you find the length of leg in a right triangle? ➢ How do you use the Pythagorean Theorem for measurement? ➢ What is the converse of the Pythagorean Theorem? ➢ What is the distance formula? ➢ How do you use the distance formula? ➢ Explain how to identify a right triangle.	**Apply: DOK Level 3:** Students will be able to use the Pythagorean theorem to solve problems. **Analyze: DOK Level 3:** Students should be able to use Pythagorean theorem to solve real life situations.	1) Pythagorean theorem 2) Leg 3) Hypotenuse 4) Square root 5) Radical 6) Measurement 7) Distance 8) Converse 9) Distance formula 10) Coordinate plane 11) Diagonal

Ganado Unified School District (Mathematics/Grade 8)

4th Quarter - *March 2016- May 2016*

	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
Week 1 & 2	1. 8. CC.G.9: Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. **Holt McDougal Resource pg. 267-271/282-285** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 163-167** **Algebra 1 pg. SR17-SR18** **Material worksheet**	➢ What is a: a. Triangular prism b. Rectangular prism c. Cylinder d. Rectangular pyramid e. Triangular Pyramid f. Cone g. Sphere ➢ How do you find the volume of a: a. Triangular prism b. Rectangular prism c. Cylinder d. Rectangular pyramid e. Triangular pyramid f. Cone g. Sphere ➢ How do you find the surface area of sphere? ➢ What is surface area? ➢ What is a hemisphere? ➢ How do you find the volume of a figure to the nearest tenth? ➢ What is the difference between a pyramid and prism? ➢ How are the formulas differing for prism and pyramid? ➢ How are the formulas similar for a cone and cylinder? ➢ What is important to explore the effects of changing dimension?	**Analyze: DOK Level 2:** Students will be able to analyze similarities/differences between procedures or solutions of real-world and mathematical problems involving volume of cylinders, cones, and spheres. **Evaluate: DOK Level 3:** Students will be able to cite evidence and develop a logical argument for concepts or solutions of real-world and mathematical problems involving volume of cylinders, cones, and spheres.	1. Volume 2. Area 3. Formula 4. Triangular prism 5. Rectangular prism 6. Cylinder 7. Rectangular base pyramid 8. Triangular base pyramid 9. Cone 10. Sphere 11. Hemisphere 12. Great circle

Week 7	2. 8. CC.SP.1: Construct and interpret scatter plots for bivariate measurement data investigate patterns of association between two quantities. Describe patters such as clustering, outliers, positive or negative association, linear association, and nonlinear association. **Holt McDougal Resource pg. 386-389** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 208-217** **Algebra 1 pg. 264-270** **Material worksheet** 3. 8. CC.SP.2: Know the straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the points to the line. **Holt McDougal Resource pg. 390-393** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 212-217** **Algebra 1 pg. 275-281** **Material worksheet**	➢ What is a scatter plot? ➢ How do you use a scatter plot? ➢ What kind of information's are used for a scatter plot? ➢ What are correlations? ➢ How many correlations exist? ➢ What is a line of best fit? ➢ How do you describe a correlation for a scatter plot? ➢ How do you use data to make predictions?	**Analyze: DOK Level 3:** Students will be able to simplify a pattern in scatterplots. **Analyze: DOK Level 4:** Students will be able to gather, analyze, and evaluate information. Possibly a Venn Diagram or using one of the Core 5 graphic organizers.	1. Scatter plot 2. Correlations 3. Line of best fit 4. Week/Strong correlations 5. Negative/Positive correlations 6. No correlations 7. Clustering 8. Patterns

	4. 8. CC.SP.3: Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for biology experiment, interpret a slope of 1.5 cm/hr. as meaning that an additional hour of sunlight each day is associated with an additional 1.5cm in mature plant height.* **Holt McDougal Resource pg. 390-393** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 218-221** **Algebra 1 not available** **Material worksheet** 5. CC.8.SP.4: Understand the patterns of association can also be seen bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows of columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?* **Holt McDougal Resource pg. 396** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 222-226** **Algebra 1 not available** **Material worksheet**	➢ What is clustering? ➢ How do you observe a pattern using a scatter plot? ➢ How do you assess the line of best fit? ➢ How do you apply scatter plots for real life situations?		

	18. CC.8.EE.7a: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. **Holt McDougal Resource pg. 300-314** **Prentice Hall Resource Review of pg.** **Buckle Down pg. 41-48** **Algebra 1 pg. 91-103** **Material worksheet**	➢ Describe how do you compare numbers written scientific notations? ➢ Explain how do you use order of operations with scientific notations? ➢ What is the distributive property? Provide an example. ➢ How do we use the Distributive Property? Provided an example. ➢ Explain how do we use the Distributive Property to simplify expressions? ➢ Explain how do we use real world situations when solving linear equations? ➢ How do we solve literal equations?		

Ganado Unified School District
(Mathematics/Grade 8)

Taught Throughout the Year - *August 2015- May 2016*

Time line	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
	1. 8. NS.1: Know that numbers are not rational are called irrational. Understand informally that every number has a decimal expansion for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational umber. 2. 8. NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.	➢ What is a real numbers? ➢ What is an irrational number? ➢ What is a rational number? ➢ Can you organize numbers from least and greatest using a number line? ➢ Can you describe whether a number is irrational or rational? ➢ How do you cite and develop a logical argument for irrational and rational numbers? Possibly a Venn Diagram or one of the Core 6 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to use evidence and reasoning skills to explain whether a number is irrational or rational. **Evaluate: DOK Level 3:** Students will be able to **cite** and develop logical argument for irrational and rational numbers.	1) Real Numbers 2) Rational Numbers 3) Irrational Numbers 4) Natural 5) Whole 6) Integers 7) Improper Fraction 8) Mixed Numbers 9) Fractions 10) Decimal 11) Radicals 12) Perfect Square Root 13) Imperfect Square Root
	3. 8. F.1: Understand at a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 4. 8. F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal description). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	➢ What is a rule? ➢ What is a table? ➢ How do you create a table? ➢ What is an input/output? ➢ Why do we use domain/range sometimes instead of input/output? Use one of the Core 6 graphic organizers.	**Analyze: DOK Level 3:** Students will be able to interpret data from complex graph and graph linear equations. **Evaluate: DOK Level 3:** Students will be able to cite evidence and develop a logical argument for concepts or solutions of graphing linear equations.	➢ Input ➢ Output ➢ Coordinates ➢ X-axis ➢ Y-axis ➢ Range ➢ Domain ➢ Function ➢ Linear Equations ➢ Table ➢ Equations ➢ Slope ➢ Y-intercept ➢ Vertical Line test ➢ Positive Slope ➢ Negative Slope

	12. 8. CC.G.6: Explain a proof of the Pythagorean Theorem and its converse. 13. 8. CC.G.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 14. 8. CC.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	➢ What is the Pythagorean Theorem? ➢ How do you use the Pythagorean Theorem? ➢ For which triangle do you use the Pythagorean Theorem? ➢ What is a hypotenuse? ➢ How do you find the length of a hypotenuse using the Pythagorean Theorem? ➢ How do you find the length of a hypotenuse to the nearest hundredth? ➢ How do you find the length of leg in a right triangle? ➢ How do you use the Pythagorean Theorem for measurement? ➢ What is the converse of the Pythagorean Theorem? ➢ What is the distance formula? ➢ How do you use the distance formula? ➢ Explain how to identify a right triangle.	**Apply: DOK Level 3:** Students will be able to use the Pythagorean theorem to solve problems. **Analyze: DOK Level 3:** Students should be able to use Pythagorean theorem to solve real life situations.	➢ Pythagorean theorem ➢ Leg ➢ Hypotenuse ➢ Square root ➢ Radical ➢ Measurement ➢ Distance ➢ Converse ➢ Distance formula ➢ Vertical change ➢ Horizontal change ➢ Coordinate plane ➢ X-axis ➢ Y-axis ➢ Diagonal ➢ Sides ➢ Length ➢ Width ➢

Resource Material

Title of Resource Material	Material/Address	Username	Password
1. Holt McDougal: Mathematics Grade 8 a. Common Core Edition	Copyright 2002 by Houghton Mifflin Harcourt Publishing Company Online Resource: http://my.hrw.com/	Val05	Megan
2. Prentice Hall: Mathematics Course 3	Copyright 2004 by Pearson Education, Inc., Publishing Online Resource: not available		
3. Holt McDougal: Larson Algebra 1 a. Common Core Edition	Copyright 2012 by Houghton Mifflin Harcourt Publishing Company Online Resource: not available		
4. McDougal Little: Algebra 1 a. Concepts and Skills	Copyright 2004 by McDougal Littell, a division of Houghton Mifflin Company Online Resource: not available		
5. Buckle Down to the Common Core State Standards: 8th Grade Mathematics	Copyright 2011 Triumph Learning, LLC Online Resource: not available		
6. Renaissance Place	Online: https://hosted314.renlearn.com/257525/	VTaylor	Rainbow11
7. National Library of Virtual Manipulative	Online: http://nlvm.usu.edu/en/nav/vlibrary.html	Free	Free
8. Assessment Technology Incorporated	Online: http://www.ati-online.com/	valeria.taylor	Rainbow11
9.			

Ganado Unified School District

(Mathematics/Grade 8)

Supplies List

Supplies/Material	Quality	Purpose

1. Xerox Paper: a. Various Colors	2 boxes if possible	a. Copying and Printing assignments for students, printing progress reports, and keeping assignments in order using different color paper.
2. Index Cards, Construction Paper, yarn, Popsicle Sticks, and large graphing paper.	a. Index Cards (2 sets) b. Construction Paper (4 sets-various colors) c. Yarn (1 ball) d. Popsicle Sticks (3 boxes) e. Large Graphing Paper (4 sets)	a. Materials for creating projects throughout the year from classifying rational numbers, to creating posters using linear equations, creating 3-D memory boxes, and graphing linear equations using slope and y-intercept. b.
3. **Wooden Pencils, Erasers, Pens, Sharpeners (small), Rulers, Folders, Tape, whiteout, and staples.**	a. Wooden Pencils (2 boxes) b. Erasers (10 erasers) c. Pens (1 box) d. Sharpeners (small portable – 6) e. Rulers – (12) f. Folders – Student folders g. Tape - Scotch tape (12) - Project tape (4) h. Staples – (2 boxes) i. Whiteout – (1 box)	a. Materials for everyday use for writing notes or bell work, correcting errors on a test or a project. Organizing material and displaying their work in the hallway for parents to see. b.
4. **Expo-Markers, color pencils, calendar, sheet protectors, and stapler remover.**	a. Expo-marker (small/large) b. Color Pencils (box) c. Calendar (Large) d. Sheet Protectors (1 box) e. Stapler Remover (2)	a. Materials needed for student use for in class practice/whole group practice. Creating projects and organizing material. b.