

Jemez Valley Public Schools
GEOMETRY • CONTENT MAP

Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand 1: Algebra, Functions, and Graphs			
Standard: Students will understand algebraic concepts and applications.			
<p>Simplify expressions (year long)</p> <p>Evaluate expressions (year long)</p> <p>Simplify using distributive property (year long)</p> <p>Know, use and explain equivalent representations (year long)</p> <p>Calculate powers and roots (year long)</p> <p>Solve formulas for specified variables (year long)</p> <p>Manipulate expressions with positive and negative exponents (year long)</p> <p>Use basic operations with polynomial expressions (year long)</p> <p>Translate among tabular, symbolic and graphical representations</p> <p>Generate an algebraic sentence to model real life situations (year long)</p> <p>Write an equation of the line that passes thru 2 points</p>	<p>Solve applications of systems</p> <p>Verify that a point lies on a line and derive a linear equation</p> <p>Find slope between two points</p> <p>Describe symmetry of polygons</p> <p>Solve 2-3 step problems using ratios, proportions, averages and percents</p>	<p>Simplify algebraic expressions containing powers</p> <p>Factor polynomials</p> <p>Introduce the effects of parameter changes on radius/length on perimeter, area and volume.</p>	<p>Analyze the effects of parameter changes on radius/length on perimeter, area and volume</p>
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand 2: Geometry and Trigonometry			
Standard: Students will understand geometric concepts and applications			
<p>Find and use the measures of sides interior and exterior angles of triangles and polygons to classify figures.</p> <p>Demonstrate an understanding of the simple aspects of a logical argument; identify the hypothesis and conclusion in logical deduction, and use counterexamples to show that an assertion is false and recognize that a single counterexample is sufficient to refute an assertion.</p> <p>Demonstrate an understanding of inductive and deductive reasoning, explain the difference between inductive and deductive reasoning (year long)</p>	<p>Interpret and draw two-dimensional objects (special quadrilaterals such as parallelograms, rectangles, rhombuses, squares, kites), parallelograms and find the area and perimeter of basic figures.</p> <p>Find the area and perimeter of a geometric figure composed of a combination of two or more rectangles and/or triangles</p> <p>Solve problems involving parts of triangle created by sketching medians, angle bisectors, and altitudes.</p>	<p>Interpret and draw three dimensional objects and find the surface area and volume of basic figures and calculate the surface areas and volumes of these figures constructed from unions of rectangular solids and prisms with faces in common, given the formulas for these figures</p> <p>Solve problems involving the perimeter, circumference, and area of common geometric figures.</p>	<p>Trigonometry: Solve problems using the Pythagorean theorem</p> <p>Understand and use elementary relationships of basic trigonometric functions defined by the angles of a right triangle.</p> <p>Use trigonometric functions to solve for the length of the second leg of a right triangle given the angles and the length of the first leg.</p> <p>Know and use angle and side relationships in problems with</p>

<p>Demonstrate understanding of the construction of the coordinate plane, know the names of the origin, coordinate axes, and four quadrants, draw and label them correctly, find the coordinates of an indicated point, and plot a point with given coordinates.</p> <p>Determine the midpoint and distance between two points within a coordinate system and relate these ideas to geometric figures on a plane.</p> <p>Solve problems involving complementary, supplementary, and congruent angles.</p> <p>Solve problems involving the perimeter, circumference, and area of common geometric figures (year long).</p> <p>Write geometric proofs, including theorems involving the properties of parallel lines cut by a transversal line and the properties of quadrilaterals.</p> <p>Given two linear equations determine whether the lines are parallel, perpendicular or coincide</p> <p>Use basic geometric ideas in the context of the Euclidean plane, calculate the perimeter of a rectangle with integer coordinates and sides parallel to the coordinate axes and with sides not parallel.</p> <p>Solve real-world problems using congruence and similarity relationships of triangles.</p> <p>Solve problems involving congruent parts of congruent triangles.</p> <p>Solve problems using the Pythagorean theorem (year long).</p>	<p>Know and use the characteristics of the parts of a triangle</p> <p>Describe the effect of rigid motions on figures in the coordinate plane and space that include rotations, translations, and reflections.</p> <p>Deduce properties of figures using transformations that include translations, rotations, reflections and dilations in the coordinate system</p>		<p>special right triangles.</p> <p>Circles: Identify and solve problems involving circles to include: chords, arcs, tangents, secants, inscribed circles, inscribed angles, angle measures and segment lengths</p>
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
<p>Strand 3: Data Analysis and Probability Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.</p>			
		<p>Use probability to generate convincing arguments, draw conclusions and make decisions in a variety of situations (geometric probability)</p>	<p>Understand the differences between the various methods of data collection</p> <p>Construct and interpret frequency tables, histograms, stem-and-leaf plots, and box-and-whisker plots</p> <p>Calculate and apply measures of central tendency (mean,</p>

			<p>median, mode, range, quartiles)</p> <p>Be able to display a linear scatter plot and describe its shape using technology</p> <p>Be able to display a quadratic scatter plot and describe its shape using technology</p> <p>Make predictions from a linear pattern in data</p> <p>Understand the concept of probability as relative frequency</p> <p>Use simulations to compute the expected value and probabilities of random variables in simple cases</p>
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