Pecos Valley Mathematics Outline—Course 1

NM State Standards

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| Standard | Unit  **Bold—primary**  Non-bold—secondary  TESTED |
| **9-12.A.1.1** Use the special symbols of mathematics correctly and precisely. [+/-/\*/div, delta, absolute value, equal to, not equal to, <,>, pi, exponents] | 1 |
| **9-12.A.1.2** Classify and use equivalent representations of natural, whole, integer, rational, irrational numbers and complex numbers, and choose which type of number is appropriate in a given context. | 1, 3 |
| **9-12.A.1.3** Determine the relative position on the number line and the relative magnitude of integers, decimals, rationals, irrationals, and numbers in scientific notation. | 1 |
| **9-12.A.1.4** Explain that the distance between two numbers on the number line is the absolute value of their difference. | 1, 2-R |
| **9-12.A.1.6** Simplify numerical expressions using the order of operations, including integer exponents. | 1 |
| **9-12.A.1.7** Translate verbal statements into algebraic expressions or equations. |  |
| **9-12.A.1.12** Explain and use equivalent representations for algebraic expressions (e.g., simplify using the distributive property). | **4** |
| **9-12.A.1.14** Evaluate polynomial, *rational, radical, and absolute value expressions* for one or more variables. |  |
| **9-12.A.1.17** Solve linear equations and inequalities in one variable including those involving the absolute value of a linear function. |  |
| **9-12.A.1.19** Use the four basic operations (+, -, ×, ÷) in contextual situations with numbers in scientific notation, and express the results with the appropriate number of significant figures. |  |
| **9-12.A.2.1** Distinguish between the concept of a relation and a function. |  |
| **9-12.A.2.2** Determine whether a relation defined by a graph, a set of ordered pairs, a table of values, an equation, or a rule is a function. |  |
| **9-12.A.2.3** Translate among tabular, symbolic, and graphical representations of functions and relations. | **2** |
| **9-12.A.2.4** Construct a linear function that represents a given graph. |  |
| **9-12.A.2.5** Explain and use function notation in both abstract and contextual situations and evaluate a function at a specific point in its domain. |  |
| **9-12.A.2.6** Graph a linear equation and demonstrate that it has a constant rate of change. | **4** |
| **9-12.A.2.8** Graph a quadratic function and understand the relationship between its real zeros and the x-intercepts of its graph. [specifically graphing quadratic functions—other components mastered in future courses] |  |
| **9-12.A.2.13** Read information and draw conclusions from graphs, and identify properties of a graph that provide useful information about the original problem | 2-R |
| **9-12.A.2.14** Understand the relationship between the coefficients of a linear equation and the slope and x- and y- intercepts of its graphs | **4** |
| **9-12.A.2.15** Evaluate estimated rate of change in a contextual situations | **2, 4** |
| **9-12.A.3.1** Model real-world phenomena using linear equations and linear inequalities interpret resulting solutions, and use estimation to detect errors. | **4** |
| **9-12.A.3.4** Solve systems of linear equations in two variables algebraically and **graphically** |  |
| **9-12.A.3.6** Write an equation of the line that passes through two given points. | **4** |
| **9-12.A.3.7** Verify that a point lies on a line, given an equation of the line, and be able to derive linear equations given a point and a slope. | **4** |
| **9-12.A.3.8** Determine whether the graphs of two given linear equations are parallel, perpendicular, coincide or none of these. | 4-Intro |
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| **9-12.G.1.1** Understand that numerical values associated with measurements of physical quantities must be assigned units of measurement or dimensions; apply such units correctly in expressions, equations and problem solutions that involve measurements; and convert a measurement using one unit of measurement to another unit of measurement. | 1 |
| **9-12.G.1.2** Find the area and perimeter of a geometric figure composed of a combination of two or more rectangles, triangles, and/or semicircles with just edges in common. |  |
| **9-12.G.1.4** Identify the hypothesis and conclusion in examples of conditional statements. |  |
| **9-12.G.1.5** Use definitions in making logical arguments. | 1 |
| **9-12.G.2.1** Identify the origin, coordinate axes, and four quadrants on the Cartesian coordinate plane, and draw and label them correctly. | 1,2 |
| **9-12.G.2.2** Determine the midpoint and distance between two points within a coordinate system and relate these | **2** |
| **9-12.G.3.1** Use rigid motions (compositions of reflections, translations and rotations) to determine whether two geometric figures are congruent in a coordinate plane. | 2-I |
| **9-12.G.4.2** Solve problems involving complementary, supplementary, and congruent angles. | **2** |
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| **9-12.D.1.1** Explain the differences between various methods of data collection. |  |
| **9-12.D.2.1** Distinguish measurement data from categorical data, and define the term *variable*. | 1, 3 |
| **9-12.D.2.2** Explain the meaning of *univariate* and *bivariate* data. | 1 |
| **9-12.D.2.8** Describe the shape of a scatterplot. | **4** |
| **9-12.D.2.9** Use linear patterns in data to make predictions. | **2** |
| **9-12.D.2.10** Use technological tools to find the line of best fit. |  |
| **9-12.D.3.1** Explain the concept of a random variable. | 3 |
| **9-12.D.3.2** Explain how the relative frequency of a specified outcome of an event can be used to estimate the probability of the outcome. | 3 |
| **9-12.D.3.3** Use the results of simulations to compute the expected value and probabilities of random variables in simple cases. | 3 |
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