| **Concepts**  *Describe what students should know (key knowledge) as a result of this instruction specific to grade level.* | **Competencies**  *Describe what students should be able to do (key skills) as a result of this instruction, specific to grade level.* | **Tier 3 Vocabulary**  *Words with a low frequency of use, often limited to special, specific domains. They are best learned when a specific need arises.* |
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| Properties of Rational and Irrational Numbers | Apply and extend the properties of exponents to solve the problems with rational exponents  Represent and/or use numbers in equivalent forms (integers, fractions, decimals, percent’s, square roots, exponents).  Apply properties of rational and irrational numbers to solve real world or mathematical problems  CC.2.1.HS.F.1  CC.2.1.HS.F.2 | 1) Absolute Value  2) Additive Inverse  3) Arithmetic Sequence\*  4) Asymptote\*  5) Binomial  6) Bar Graph\*  7) Box-and-Whisker Plot\*  8) Circle Graph\*  9) Coefficient  10) Composite Number\*  11) Compound Event  12) Constant  13) Coordinate Plane\*  14) Degree (of polynomial)  15) Dependent Events  16) Dependent Variable  17) Domain (of Relation or Function)  18) Elimination Method  19) Estimation Strategy  20) Exponent\*  21) Expression\*  22) Factor (verb)  23) Factor a Monomial  24) Factor a Polynomial  25) Function  26) Independent Events  27) Independent Variable\*  28) Interquartile Range  29) Inverse (of a Relation)  30) Irrational Number  31) Like Terms  32) Line of Best Fit  33) Linear Combination  34) Linear Equation  35) Linear Function  36) Linear Inequality  37) Mapping  38) Maximum Value (of a Graph)  39) Measure of Central Tendencies  40) Measure of Dispersion  41) Minimum Value  42) Monomial  43) Multiplicative Inverse  44) Negative Exponent\*  45) Odds  46) Outlier  47) Point-Slope Form  48) Polynomial  49) Polynomial Function  50) Positive Exponents\*  51) Power\*  51) Power of a Power  52) Powers of Products  53) Probability\*  54) Probability of Compound Events  55) Quadratic Equation  56) Quartile  57) Radical Expression  58) Range (of a Function or Relation)  59) Rate\*  60) Rate (of Change)  61) Ratio  62) Rational Expression  63) Relation  64) Rise\*  65) Run\*  66) Scatterplot  67) Simple Event  68) Simplest form (of an Expression)  69) Slope (of a Line)  70) Slope-Intercept Form  71) Standard Form (of a Linear Equation)  72) Stem-and-Leaf Plot  73) Substitution  74) Substitution Method  75) Systems of Linear Equations  76) Systems of Linear Inequalities  77) Term  78) Trinomial  79) Unit Rate  80) Variable  81) x-intercept  82) y-intercept  \* – May not be Tier 3 in Algebra 1 |
| The Real Number System | Apply and extend the properties of exponents to solve problems with rational exponents  Apply number theory concepts to show relationships between real numbers in problem-solving settings.  Use exponents, roots, and/or absolute values to solve problems.  Use estimation strategies in problem-solving situations.  CC.2.1.HS.F.1  CC.2.1.HS.F.2  CC.2.1.HS.F.3 |
| Equations and Inequalities | Interpret solutions to linear equations and inequalities.  Interpret solutions to linear systems of equations and inequalities.  Evaluate reasonability of solutions.  CC.2.1.HS.F.3  CC.2.1.HS.F.4  CC.2.1.HS.F.5 |
| Polynomial and Rational Expressions | Simplify/factor expressions involving polynomials.  Apply and extend previous understandings of arithmetic to algebraic expressions.  Use polynomial identities.  Perform arithmetic operations on polynomials.  CC.2.2.HS.D1  CC.2.2.HS.D2  CC.2.2.HS.D3  CC.2.2.HS.D5  CC.2.2.HS.D6 |
| Equations and Inequalities | Write, solve, and/or graph linear equations and inequalities using various methods.  Write, solve, and/or graph systems of linear equations and inequalities using various methods.  Use and/or identify algebraic properties.  CC.2.2.HS.C.1  CC.2.2.HS.C.2  CC.2.2.HS.C.3 |
| Equations and Inequalities | Write, solve, and/or graph compound inequalities.  Write and/or identify linear equations in various forms (slope-intercept, point-slope, standard, etc.).  Understand and apply the Pythagorean Theorem.  Describe, compute, and/or use linear rate of change (slope).  CC.2.2.HS.C3  CC.2.2.HS.C5  CC.2.2.HS.D7  CC.2.2.HS.D9  CC.2.2.HS.D10 |
| Patterns, Relations and Functions | Define, evaluate, and compare functions.  Use the concept and notation of function to interpret and apply them in terms of their context.  Create a function and/or sequence that model relationships between two quantities.  Create and/or analyze functions using multiple representations (graph, table, and equation).  Create new functions from existing functions (transformations of graphs).  Construct and compare linear, quadratic, and exponential models and solve problems.  CC.2.2.HS.C1  CC.2.2.HS.C2  CC.2.2.HS.C3  CC.2.2.HS.C4  CC.2.2.HS.C6 |
| Categorical and Quantitative Data | Analyze a set of data for a pattern, and represent the pattern with an algebraic rule and/or a graph.  Summarize, represent, and interpret single-variable data and two-variable data.  Use measures of dispersion to describe a set of data (range, quartiles, interquartile range).  Analyze and/or interpret data displays and/or use them to make predictions (circle graph, line graph, bar graph, box-and-whisker plot, stem-and-leaf plot, scatter plot).  Make inferences and justify conclusions based on sample surveys, experiments, and observational studies  CC.2.4.HS.B.1  CC.2.4.HS.B.2  CC.2.4.HS.B.3  CC.2.4.HS.B.5 |  |
| Probability | Calculate and/or make predictions based upon measures of central tendency.  Apply probability to practical situations, including compound events.  Recognize and evaluate random processes underlying statistical experiments  Apply the rules of probability to compute probabilities of compound events in a uniform probability model  CC.2.4.HS.B.4  CC.2.4.HS.B.7 |