Grades 6-8 Equation Progression

| **SOL 6.13** | SOL 7.12 | SOL 8.17 |
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| **Essential Knowledge and Skills** | Essential Knowledge and Skills | Essential Knowledge and Skills |
| **The student will use problem solving, mathematical communication, mathematical reasoning, connections and representation to**   * Identify examples of the following algebraic vocabulary: equation, variable, expression, term, and coefficient. * Represent and solve one-step linear equations in one variable, using a variety of concrete materials such as colored chips, algebra tiles, or weights on a balance scale. * Apply properties of real numbers and properties of equality to solve a one-step equation in one variable. Coefficients are limited to integers and unit fractions. Numeric terms are limited to integers. * Confirm solutions to one-step linear equations in one variable. * Write verbal expressions and sentences as algebraic expressions and equations. * Write algebraic expressions and equations as verbal expressions and sentences. * Represent and solve a practical problem with a one-step linear equation in one variable. | The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to   * Represent and solve two-step linear equations in one variable using a variety of concrete materials and pictorial representations. * Apply properties of real numbers and properties of equality to solve two-step linear equations in one variable. Coefficients and numeric terms will be rational. * Confirm algebraic solutions to linear equations in one variable. * Write verbal expressions and sentences as algebraic expressions and equations. * Write algebraic expressions and equations as verbal expressions and sentences. * Solve practical problems that require the solution of a two-step linear equation. | The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to   * Represent and solve multistep linear equations in one variable with the variable on one or both sides of the equation (up to four steps) using a variety of concrete materials and pictorial representations. * Apply properties of real numbers and properties of equality to solve multistep linear equations in one variable (up to four steps). Coefficients and numeric terms will be rational. Equations may contain expressions that need to be expanded (using the distributive property) or require collecting like terms to solve. * Write verbal expressions and sentences as algebraic expressions and equations. * Write algebraic expressions and equations as verbal expressions and sentences. * Solve practical problems that require the solution of a multistep linear equation. * Confirm algebraic solutions to linear equations in one variable. |