Unwrapping the Standards

**Content Area:** Algebra 1 **Completed By:**  Stephanie Whitehair

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| **Essential Standard:**A1.A-SSE.A.1 Interpret expressions that represent a quantity in terms of its context.  |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| a. Interpret parts of an expression, such as terms, factors, and coefficients.b. Interpret expressions by viewing one or more of their parts as a single entity. | Write algebraic expressionsUse the order of operations to evaluate expressionsFactor Trinomials in the form ax²+bx+cFactor perfect square trinomials Factor by grouping | DOK 1DOK 2 |
| Vocabulary:Variable, algebraic expression, numerical expression, power, exponent, base, simplify, acronym PEMDAS, factor, trinomial |

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| **Bloom’s Taxonomy** | **Marzano’s Taxonomy** | **Webb’s Depth of Knowledge** |
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* Analyzing
* Evaluating
* Creating
 |  Level 1: Retrieval Level 2: Comprehension Level 3: Analysis Level 4: Knowledge utilization Level 5: Metacognition Level 6: Self-System thinking | * Recall and reproduction (DOK 1)
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| **Essential Standard:**A1.A-SSE.B Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| a. Factor a quadratic expression to reveal the zeros of the function it defines. b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.  | Solve quadratic equations by factoringSolve quadratic equations by completing the square  | DOK 1DOK 1 |
| Vocabulary:Zero Product Property, completing the square  |

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| **Essential Standard:**A1.A-APR.A.1 Perform arithmetic operations on polynomials. |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. | To classify, add, and subtract polynomialsTo multiply by a polynomialTo factor a monomial from a polynomial To multiply two binomials or a binomial by a trinomialTo find the square of a binomial and to find the product of a sum and difference  | DOK 1 |
| Vocabulary:Polynomial, degrees of a monomial. Standard form of a polynomial, Distributive Property, binomial, trinomial, product  |

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| **Essential Standard:**A1.A-APR.B.3 Understand the relationship between zeros and factors of polynomials. |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. Focus on quadratic and cubic polynomials in which linear and quadratic factors are available. | To solve quadratic equations by graphing, using square roots, and factoring Use zeros to construct a rough graph (supplemental materials needed, this is not in the book) | DOK 1DOK 2When applying to real world applications |
| Vocabulary:Roots of the equation, zero of the function |

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| **Essential Standard:**A1.A-CED.A.1 Create equations that describe numbers or relationships. |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step). | To solve equations using tables and mental math To solve one-step equations in one variableTo solve two-step equations in one variableTo solve multi-step equations in one variableTo solve equations with variables on both sides To use multiplication or division to solve an inequalityTo solve multi-step inequalitiesTo solve equations and inequalities involving absolute valueTo find union and intersection of setsTo solve a quadratic equation by factoring, graphing, using square roots, completing the squareTo solve rational equations and proportions  | DOK 1DOK 2When applying to real world applications |
| Vocabulary:Equation, open sentence, equivalent equations, addition property of equality, subtraction property of equality, isolate, inverse operations, multiplication property of equality, division property of equality, inequality, solution of an inequality, absolute value, union, intersection, null set |

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| **Essential Standard:**A1.A-CED.A.2 |
| **Skills and Concepts** |
| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | To use tables, equations, and graphs to describe relationshipsTo write equations in the form of direct variation y=kxTo write and graph equations in slope intercept form, point slope form and standard form | DOK 1 |
| Vocabulary:Linear equation, point slope, y-axis, x-axis, x and y intercepts  |

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| **Essential Standard:**A1.A-CED.A.4 |
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| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law V = IR to highlight resistance R. | To rewrite and use literal equations and formulas | DOK 2 |
| Vocabulary: |

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| **Essential Standard:**A1.A-REI.B.3 |
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| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | To solve two step equations, multistep equations, equations with variables on both sides, literal equationsTo solve and apply proportionsTo use addition, subtraction, multiplication, and division to solve inequalities To solve multistep inequalities To work with setsTo solve compound inequalities |  |
| Vocabulary:Proportion, inequality, inverse operations, compound inequality  |

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| 1. Students will know…(the concepts that support the standard) | 2. And be able to….(the skills students are able to demonstrate after instruction) | 3. Level of thinking (from one of the 3 frameworks listed on below) |
| Solve quadratic equations in one variable. a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – k) 2 = q that has the same solutions. Derive the quadratic formula from this form. b. Solve quadratic equations by inspection (e.g., x2 = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Focus on solutions for quadratic equations that have real roots. Include cases that recognize when a quadratic equation has no real solutions. | a.To solve equations by completing the squareTo solve quadratic equations using the quadratic formulaTo find the number of solutions of a quadratic equationb. |  |
| Vocabulary:Completing the square,  |

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