Unit 3: Working with Quadratic Equations

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Factor quadratics (A.SSE.3a) Complete the square (A.SSE.3b)		Use factoring and completing the square in a quadratic function to determine **all** of the following: ● the vertex ● axis of symmetry, ● direction of opening, ● zeros/roots in context of the situation	**Use factoring and completing the square** in a quadratic function to determine **two** of the following: ● the vertex ● axis of symmetry, ● direction of opening, ● zeros/roots **in context of the situation**	**Given a quadratic function** in: ● vertex form find the vertex; ● factored form find the zeros/ roots; ● standard form find the direction of opening	
Create and solve 1 variable equations (A.CED.1)	Can extend thinking beyond the standard, including tasks that may involve one of the following: ● Designing ● Connecting ● Synthesizing ● Applying ● Justifying ● Critiquing ● Analyzing ● Creating ● Proving	Create linear equations with one variable and use them in a contextual situation **and solve problems**	**Create** linear equations with one variable and use them in a contextual situation	**Identify** linear equations with one variable to represent a contextual situation	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Create and solve 2 variable equations (A.CED.2) Rearrange expressions (A.CED.4) Explain steps of solving (A.REI.1)		Create a system of equations to model a situation Solve a system of linear equations approximately (graphing **with labels and scales**) and exactly (algebraically) when multiplication or rearranging is necessary	**Create** a system of equations to model a situation Solve a system of linear equations approximately (graphing) and exactly (algebraically) **when multiplication or rearranging is necessary**	**Identify** a system of equations to model a situation Solve a system of linear equations approximately (graphing) and exactly (algebraically)	
Solve by completing the square/quadratic formula (A.REI.4a) Solve by inspection (A.REI.4b)		Solve quadratic equations using **all** of the following methods ● inspection ● taking square roots, ● completing the square, ● the quadratic formula ● factoring	Solve quadratic equations by **using three** of the following methods: ● inspection ● taking square roots ● completing the square ● the quadratic formula ● factoring	Solve quadratic equations by **using two** of the following methods: ● inspection ● taking square roots ● completing the square ● the quadratic formula ● factoring	
Quadratic formula with negative discriminates (N.CN.7)		Solve quadratic equations with complex roots using **both** of the following ● Quadratic formula ● Factoring	**Solve** quadratic equations with complex roots using **one** of the following ● Quadratic formula ● Factoring	**Determine** if a quadratic has complex or real roots	
Systems of quadratics and linear (A.REI.7)		Solve a system of a linear equation and quadratic equation in two variables algebraically, **when completing the square is necessary**	Solve a system of a linear equation and quadratic equation in two variables algebraically, **when having to solve for y**	Solve a system of a linear equation and quadratic equation in two variables algebraically, **when one equation is solved for y**	