Unit 4: Reasoning with Equations

A. Solving Systems of Equations & Inequalities

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Explain steps to solving (A.REI.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	Explain each step in solving an equation using properties of equality **and justify the solution method**	**Explain** each step in solving an equation using properties of equality.	**Identify**/match properties of equality used for each step in solving an equation.	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Solve systems of equations (A.REI.6)		Solve a system of linear equations approximately (graphing **with labels and scales**) and exactly (algebraically) when multiplication or rearranging is necessary	Solve a system of linear equations approximately (graphing) and exactly (algebraically) **when multiplication or rearranging is necessary**	Solve a system of linear equations approximately (graphing) and exactly (algebraically)	
Explaining solutions (A.REI.5, A.REI.11*)		Explain a solution to a system of equations (algebraically, graphically, or with tables) **in context of a given situation**	**Explain a solution** to a system of equations (algebraically, graphically, or with tables)	**Verify** solutions to a system of equations (algebraically, graphically, or with tables)	

A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

A.REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. .

A.REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions

A.REI.11* Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find solutions to f(x) = g(x) approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, quadratic, or exponential functions. *(Modeling Standard)

Unit 4: Reasoning with Equations

B. Applications of Systems of Equations & Inequalities

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Create systems of equations (A.CED.2*)	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 a system of equations to model a situation	**Create** a system of equations to model a situation	**Identify** a system of equations to model a situation	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Solve systems of equations (A.REI.6)		Solve a system of linear equations approximately (graphing **with labels and scales**) and exactly (algebraically) when multiplication or rearranging is necessary	Solve a system of linear equations approximately (graphing) and exactly (algebraically) **when multiplication or rearranging is necessary**	Solve a system of linear equations approximately (graphing) and exactly (algebraically	
Explaining solutions (A.REI.5)		Explain a solution to a system of equations (algebraically, graphically, or with tables) **in context of a given situation**	**Explain a solution** to a system of equations (algebraically, graphically, or with tables)	**Verify** solutions to a system of equations (algebraically, graphically, or with tables)	

A.CED.2* Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

A.REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions

A.REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.