Algebra 2 Unit 1: Solving Systems of Equations and Inequalities

Standards:

- 1. A-CED1-4: Create equations that describe numbers or relationships.
 - a. Create equations and inequalities in one variable and use them to solve problems.
 - b. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
 - c. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
 - d. Rearrange formulas to highlight a quantity of interest, using the same reasoning in solving equations.
- 2. A- REI 10-12: Represent and solve equations and inequalities graphically.
 - a. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve.
 - b. Explain why the x coordinates of the points where two lines intersect are the solutions of the two equations. Find the solutions to the two lines.
 - c. Graph the solutions to a linear inequality in two variables as a half plane, and graph the solution st to a system of linear inequalities in two variables as the intersection of the corresponding half planes.
- 3. A- REI 5, 6, 8, 9: Solve systems of equations.
 - a. 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.
 - b. Solve systems of linear equations exactly and approximately focusing on pairs of linear equations in two variables.
 - c. Represent a system of linear equations as a single matrix equation in a vector variable.
 - d. Find the inverse of a matrix if it exists and use it to solve systems of linear equations.
- 4. N-VM 6-8: Perform operations on matrices and use matrices in applications.
 - a. Use matrices to represent and manipulate data.
 - b. Multiply matrices by scalars to produce new matrices
 - c. Add, subtract, and multiply matrices of appropriate dimensions.

Test Standards:

- 1. Differentiate between equation and inequality
- 2. Solve systems of equations
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 3. Solve systems of equalities
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 4. Perform operations on matrices (add, subtract, multiply)
- 5. Solve real-world application problems using systems of equations and matrices

Test Standards:

- 1. Differentiate between equation and inequality
- 2. Solve systems of equations
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 3. Solve systems of equalities
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 4. Perform operations on matrices (add, subtract, multiply)
- 5. Solve real-world application problems using systems of equations and matrices

Test Standards:

- 1. Differentiate between equation and inequality
- 2. Solve systems of equations
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 3. Solve systems of equalities
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 4. Perform operations on matrices (add, subtract, multiply)
- 5. Solve real-world application problems using systems of equations and matrices

Test Standards:

- 1. Differentiate between equation and inequality
- 2. Solve systems of equations
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 3. Solve systems of equalities
 - a. Graphically
 - b. Substitution
 - c. Elimination
 - d. Matrix
- 4. Perform operations on matrices (add, subtract, multiply)
- 5. Solve real-world application problems using systems of equations and matrices