Unit 7-Systems of Linear Equations
Algebra I
3 Weeks

Essential Questions

- What does the number of solutions (none, one or infinite) of a system of linear equations represent?
- What are the advantages and disadvantages of solving a system of linear equations graphically versus algebraically?
- How can systems of equations be used to represent situations and solve problems?

Enduring Understandings

1. Systems of linear equations can be used to model problems. Systems of equations can be solved by graphing, substitution, or eliminating a variable.
2. Some problems can be modeled by systems of linear equations.

Content

Topics (Pearson):	**Students will know…**
(6-1) Solving Systems by Graphing (6-2) Solving Systems by Substitution (6-3) Solving Systems by Elimination (6-4) Applications of Linear Systems	• One solution, No Solution, Infinitely Many Solutions. • Substitution Method • Graphing Method • Elimination Method

21st Learning Expectations

Students will be able to…

- Employ mathematical problem solving skills effectively.
- Make decisions and solve problems in independent and collaborative settings.

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21st Century Learning Skills

Students will be able to…

- ML #1 – Make sense of problems and persevere in solving them.
- ML #5 – Use appropriate tools strategically.

Connecticut State Standards

CCSS

- A-CED 3. 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.
- 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, focusing on pairs of linear equations in two variables.
- A-REI 11. Explain why the x-coordinate of the points where the graphs of $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$; find the solutions approximately, or find successive approximations.

Objectives

Students will be able to…

- Solve systems of linear equations using Graphing, Substitution, and Elimination.
- Identify the three possible types of solutions for a system of two equations.
- Write systems of equations to solve problems.

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Assessments
• Quiz EU1a – Graphing System of Linear Equations • Quiz EU1b. – Substitution Method • Quiz EU1c. – Elimination Method • Quiz EU2 – Linear Applications • Unit Test – Systems of Linear Equations

Resources
Graphing Calculators (TI-83 or TI-84) Pearson-Algebra I Textbook Excel Online Graphing Tool