

Richmond Public Schools
Department of Curriculum and Instruction
Curriculum Pacing And Resource Guide – Unit Plan



Course Title/ Course #: Algebra 1

Unit Title/ Marking Period # (MP#1): Solving Linear Equations

Start day:

Meetings (Length of Unit): 4

Desired Results ~ What will students be learning?

Standards of Learning/ Standards

The student will solve multistep linear and quadratic equations in two variables, including
e) solving systems of two linear equations in two variables algebraically and graphically; and
f) solving real-world problems involving equations and systems of equations.

Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions.

The student will solve multistep linear inequalities in two variables, including
d) solving systems of inequalities.

Essential Understandings/ Big Ideas

- A system of linear equations with exactly one solution is characterized by the graphs of two lines whose intersection is a single point, and the coordinates of this point satisfy both equations.
- A system of two linear equations with no solution is characterized by the graphs of two lines that are parallel.
- A system of two linear equations having infinite solutions is characterized by two graphs that coincide (the graphs will appear to be the graph of one line), and the coordinates of all points on the line satisfy both equations.
- Systems of two linear equations can be used to model two realworld conditions that must be satisfied simultaneously.
- Equations and systems of equations can be used as mathematical models for real-world situations.
- Set builder notation may be used to represent solution sets of equations.

Key Essential Skills and Knowledge

- Given a system of two linear equations in two variables that has a unique solution, solve the system by substitution or elimination to find the ordered pair which satisfies both equations.
- Given a system of two linear equations in two variables that has a unique solution, solve the system graphically by identifying the point of intersection.
- Write a system of two linear equations that models a real-world situation.
- Solve systems of linear inequalities algebraically and graphically.

Vocabulary

Substitution
Linear Equation
Linear Inequality
System of Equations
System of Inequalities
Elimination Method
Solve Graphically
Evaluate
Solution
Satisfy the equation
Set Builder notation
One Solution
No Solution
Infinite Solutions
Solution set

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Mulligan Checkpoint A.4, A.5

PowerSchool

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Create a foldable that includes the different methods of solving a system of linear equations.

Create a foldable that includes the steps to solving a system of linear inequalities.

All Things Algebra → Systems of Equations & Inequalities → Unit Bundle

→Activities

- Systems of Equations – Math Lib Activity
- Systems of Equations – Fly-Swatter Bingo
- Systems of Inequalities Math Lib
- Graphing Linear Inequalities Scavenger Hunt
- Graphing vs. Substitution Cut-Paste Activity
- Linear Inequalities Cut-Paste
- Solving System(By Graphing) Scavenger Hunt
- Solving Systems Valentine’s Day Partner Activity
- Systems Coloring Activity
- Systems Holiday Coloring Partner Activity
- Systems of Equations Flip Book
- Systems of Equations Method Comparison
- Systems of Equations Relay Race
- Systems of Equations Scavenger Hunt
- Systems of Equations Task Cards with QR Code
- Systems of Equations Triples Activity
- Systems of Equations Word Problem Scavenger Hunt
- Systems of Inequalities Scavenger Hunt
- Systems Task Cards with QR Codes
- Writing Linear Inequalities Given a Graph
- Writing Systems of Linear Inequalities Given a graph

Technology Integrations

Graphing Calculator

Gizmo

Khan Academy

Virtual Nerd

Resources

Text

Virginia Glencoe, Algebra I, ©2012, Carter, et al,
McGraw-Hill School Education Group, page(s) 333 – 368(A.4e-f), 382 – 387(A.5d)

Coach book, Virginia edition, page(s) 94 – 111, 128 – 133

Mulligan Math in Minutes A.4, A.5

Technology

- Gizmo
 - [Solving Linear Systems \(Slope-Intercept Form\)](#)
 - [Solving Linear Systems \(Standard Form\)](#)
 - [Solving Linear Systems \(Matrices and Special Solutions\) *Exclude Matrices section](#)
 - [Road Trip \(Problem Solving\)](#)
 - [Systems of Linear Inequalities \(Slope-Intercept Form\) – Activity A](#)
 - [Cat and Mouse \(Modeling Linear Systems\) – Activity B](#)
- Khan Academy
 - [Systems of Linear Inequalities](#)
- Virtual Nerd
 - [Systems of Equations and Inequalities](#)
- Discovery Streaming
 - [Free diving](#)
 - [Scuba diving](#)

Virginia Department of Education

[Road Trip](#)

[Spring Fling Carnival](#)

[The Exercise Fields](#)

[How Much is that Tune?](#)

[Graphing Systems of Inequalities](#)

Cross Curricular Connection

Economics: Calculating profit when selling two or more items or looking at two or more variables.

Science: Scuba Diving (see discovery learning link)

**Use when solving any problem that contains two or more equations to model a situation.