Subject: Algebra 2  
Grade: 9th – 12th  
Author: Irving, Texas  
Approximate Time: 90 Minutes  
Date: Fall 2008

Topic/Theme: Linear Systems

Objectives:

Content
SWBAT solve linear systems using algebraic methods’ elimination and substitution.

Language
SWBAT write a persuasive paragraph to convince their classmates to use either elimination or substitution method to solve linear systems.

Vocabulary:

Content Specific
Substitution
Elimination

Related
Combining like terms
Solving equations
Evaluate

Note: Previously, students learned how to solve equations and evaluate algebraic expressions given values of variables. Students also learned how to combine like terms. SW explain the process of both algebraic methods for solving linear systems. SW demonstrate how linear systems connect to the real world.

Materials:

Textbook, student journal, Cornell notes, Venn diagram worksheet, linear system worksheet, chart paper, markers, tape, sticky notes, internet access

Activities:

- Introduce vocabulary using bubble map
- SW work with a partner to brainstorm how we have use substitution and how we will use substitution method to solve linear systems
- Student share one idea from brainstorming with whole class
- TW share a real world idea of substitution with linear systems
- TW model how to solve linear systems using substitution
- SW write process of solving linear systems in Cornell notes
- SW explain to neighbor in their own words the process
- SW work in groups of 3 on linear system worksheet for 5 minutes
- TW have groups to write 3 of the problems on chart paper and post on wall
- SW look at other students work and write questions on sticky notes to post on chart paper that the question is about
- TW continue the lesson with explaining and modeling how to solve linear system using elimination
• SW take Cornell notes of teacher’s explanation and modeling
• SW use white board to work problems that teacher write on board for guided practice
• TW check each white board
• SW write questions about elimination method on sticky notes for teacher to collect
• TW review objectives and clarify questions from sticky notes
• SW write the process of using the elimination method on index card and exchange card with another student
• If student agree with card, then student will explain to owner why agree and draw a smiling face on index card
• If student disagree with card, then student will explain to student why he/she disagree and write great effort on index card

Closing Discussion:

Thinking out-of-the-box
In your journal, write on “How would you persuade your classmates to choose your method to solve the linear system
\[
x + y = 14 \\
x - y = 2
\]

Review & Assessment:

Vocabulary
SW use Venn diagram to compare and contrast the elimination and substitution method.

Content
SW complete linear system equation independently using their Cornell notes.

TW circulate during every activity to assess students performance

Extension / Take-home Activity:

• SW create a real world application problem with a family member that requires using the linear system. The problem must be typed in 2 languages one being English and the other one student choice. Student must submit assignment on blackboard.