UNIT OF STUDY

Title: Solving Linear/ Absolute Equations and Inequalities **Subject/Course**: Algebra 2
Length: 2 weeks

Topic: **Grade:** 11-12 **Designer:** Smith/Prado

UNIT GOALS AND EXPECTATIONS

IMPORTANT CONCEPTS/UNDERSTANDINGS:

- Solve linear equations and apply them to answer real-life questions.
- Models can help solve linear equations
- Solve simple and compound inequalities
- Solve absolute value equations and inequalities and apply them to real-life situations

Understand assigning truth values to an/or statements

ESSENTIAL QUESTIONS:

- What is a linear equation?
- What properties are used to solve linear equations?
- What models can be used to solve real-life problems?
- What is a linear inequality?
- How do you solve absolute value equations and inequalities?

STUDENT LEARNING EXPECTATIONS:

LEI.2.AII.1 Solve, with and without appropriate technology, absolute value equations and inequalities written in one or two variables, and graph solutions.

LEI.2.AII.5 Apply, with or without technology, the concepts of linear and absolute value equations and inequalities and systems of linear equations and inequalities to model real world situations including linear programming

Write a brief description of the meaning of a solution

SPECIFIC DECLARATIVE KNOWLEDGE – What I know

- Explain vocabulary words: linear equation in one variable, verbal model, algebraic model, linear inequality in one variable, compound inequality, absolute value, equation, solution of an equation, equivalent equations, variable, graph of a linear inequality, solution of a linear inequality in one variable
- Identify properties of real numbers and transformations
- Identify the algebraic model used to solve a problem
- Identify linear inequalities
- Identify an absolute value equation

Order of operations in an arithmetic(algebraic) expression

SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do

- Solve linear equations in one variable
- Apply linear equations to real-world problems
- Rewrite common formulas with more than one variable to solve for a specified variable
- Solve linear inequalities in one variable **and graph on a number line**
- Solve absolute value equations and inequalities in one variable

Be able to write algebraically an expression representing a graphical solution
Solve compound inequalities (ab. val. and linear) involving and/or
Apply solution of linear equation to solving linear and a.v. inequalities

UNIT ASSESSMENTS
(Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)

Unit 1 Open Response #1 (from TLI quiz builder) (application)
Unit 1 Open Response #2 (from TLI quiz builder) (analysis/application)
Unit 1 Open Response #3 (from TLI quiz builder) (analysis/application)

Traditional Assessments:	Other Evidence of Learning:
❖ TLI Module one Assessment ❖ TLI Module one Open Response ❖ Unit 1 Assessment ❖ Vocabulary Quiz ❖ Unit 1 Quizzes	❖ Homework ❖ Classwork ❖ Warm-up problems

ACTIVITIES AND LEARNING EXPERIENCES	Resources
Solving Linear Equations and Inequalities ❖ S will learn vocabulary using the 4-step vocabulary process(linear equation, solution of an equation, variable) ❖ S will do warm-up on adding and subtracting integers without calculator ❖ S will do balancing equations activity 16.2 ❖ T will go over activity with S and relate it to solving equations ❖ T will model solving equations on Smart Board	❖ 4-step vocabulary sheets ❖ Activity 16.2 http://www.cimt.plymouth.ac.uk/projects/mepres/book7/y7s16act.pdf ❖ text book
Applying Linear Equation ❖ S will learn vocabulary verbal model and algebraic model ❖ S will do warm-up over solving equations ❖ T will model solving real-world problems using linear equations by open response strategy ❖ S will T will model solving real-world problems using linear equations and identify the algebraic model used to solve the problem	❖ Open Response strategy ❖ vocabulary list
Rewriting Common Formulas ❖ S will do warm-up over solving equations ❖ T will relate solving one-variable equations with solving formulas for a specified variable	❖ textbook
Solve Linear Inequalities ❖ T will relate linear equations to linear inequalities ❖ T will model both simple and compound inequalities showing how to graph on a number line and using the "boat" idea for shading ❖ S will do Algebra 2 EOC practice activity	❖ practice activity in American Diploma Project book pg.66-67
Solve Absolute Value Equations and Inequalities ❖ T will relate solving equations and inequalities to solving absolute value and model using number lines and algebra ❖ "Blob" equals notes ❖ S will identify absolute value equations and inequalities in one variable and then solve using number lines and algebra	❖ noteables pg. 11 ❖ American diploma project pg. 68-69 ❖ http://www.coolmath.com/algebra/Algebra1/05AbsValueEq/02_equations.htm ❖ http://www.ms.uky.edu/~ma109/spring_2009/activities/act6.pdf (notes for absent students) ❖ http://www.lessonplanspage.com/MathConstructAlgebraLinearEquationsReviewBoardGame910.htm use as review and play games in class

Ability to quantify acceptable ranges in the work place **Ability to apply knowledge to man/min situations in purchasing, production, transportation, etc.** **Apply knowledge to budgetary issues**	
Career Connections	