

Unit 1 - Equations and Inequalities

Overview

This brief unit is a quick refresher of fundamental Algebra I topics including factoring polynomials, simplifying rational expressions, solving single variable equations and inequalities. Students will use these skills throughout the entire course.

21st Century Capacities: Analyzing, Presentation

Stage 1 - Desired Results

ESTABLISHED GOALS/ STANDARDS	Transfer:	
<p>MP 1 Make sense of problems and persevere in solving them MP4 Model with Mathematics MP6 Attend to precision MP7 Look for and make use of structure</p> <p>A.CED.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.</p> <p>A.CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law $V = IR$ to highlight resistance R. • Interpret functions that arise in applications in terms of a context. Emphasize the</p>	<i>Students will be able to independently use their learning in new situations to...</i>	
	<ol style="list-style-type: none"> 1. Manipulate equations/expressions to create order and establish relationships. 2. Draw conclusions about graphs, shapes, equations, or objects. (Analyzing) 3. Justify reasoning using clear and appropriate mathematical language (Presentation) 	
	Meaning:	
	<p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions. 2. Mathematicians understand that placing a problem in a category gives one a familiar approach to solving it. 3. Mathematicians use models to represent and make meaning of quantitative relationships. 	<p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How do I decide if my answer makes sense, and if not, what do I do? B. What do I need to support my answer? C. How do I interpret this mathematical model?

Algebra II Level 1 Curriculum

selection of a model function based on behavior of data and context-	Acquisition:	
	<i>Students will know...</i>	<i>Students will be skilled at...</i>
	<ol style="list-style-type: none"> 1. Equations have one, none or an infinite number of solutions 2. How to factor the sum or difference of two cubes 3. Vocabulary: real, rational, irrational, integer, whole, natural 	<ol style="list-style-type: none"> 1. Factoring polynomials 2. Simplifying and combining rational expressions 3. Fluently solving single variable equations (linear, absolute value, cubic) and inequalities making strategic use of algebraic structure 4. Solving literal equations (rearrange formulas) 5. Graphing solutions on a number line 6. Creating and using linear equations or inequalities in one variable to solve problems in a variety of contexts 7. Interpreting a constant, variable and term of a linear equation in one variable. 8. Determining when an equation has one, no or infinitely many solutions.