



Algebra 2 Level 1 - Unit 1 - Equations and Inequalities

Unit Focus

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.

Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
Common Core Mathematics: 9-12 - 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. (CCSS.MATH.CONTENT.HSA.CED.A.1) - Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. (CCSS.MATH.CONTENT.HSA.CED.A.4) - Make sense of problems and persevere in solving them. (CCSS.MATH.MP.1) - Model with mathematics. (CCSS.MATH.MP.4) - Attend to precision. (CCSS.MATH.MP.6) - Look for and make use of structure. (CCSS.MATH.MP.7) Madison Public Schools Profile of a Graduate - Analyzing: Examining information/data/ evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences. (POG.1.2) - Collective Intelligence: Working respectfully and responsibly with others, exchanging and evaluating ideas to achieve a common objective. (POG.3.1)	<i>Students will be able to independently use their learning to...</i> T1 manipulate equations/expressions or objects to create order and establish relationships. T2 draw conclusions about graphs, shapes, equations, or objects. T3 justify reasoning using clear and appropriate mathematical language.	
	Meaning	
	Understanding(s)	Essential Question(s)
	<i>Students will understand that...</i> U1 Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions. U2 Mathematicians understand that placing a problem in a category gives one a familiar approach to solving it. U3 Mathematicians use models to represent and make meaning of quantitative relationships.	<i>Students will keep considering...</i> Q1 How do I decide if my answer makes sense and if not, what do I do? Q2 What do I need to support my answer? Q3 How do I interpret this mathematical model?
	Acquisition of Knowledge and Skill	
	Knowledge	Skill(s)
	<i>Students will know...</i> K1 Equations have one, none or an infinite number of solutions K2 How to factor the sum or difference of two cubes K3 Vocabulary: real, rational, irrational, integer, whole, natural	<i>Students will be skilled at...</i> S1 factoring polynomials S2 simplifying and combining rational expressions S3 fluently solving single variable equations (linear, absolute value, cubic) and inequalities making strategic use of algebraic structure S4 solving literal equations (rearrange formulas) S5 graphing solutions on a number line

Stage 1: Desired Results - Key Understandings		
		S6 creating and using linear equations or inequalities in one variable to solve problems in a variety of contexts S7 interpreting a constant, variable and term of a linear equation in one variable. S8 determining when an equation has one, no or infinitely many solutions.