Algebra 1 CP Unit 2: Linear Inequalities

Unit #:	APSDO-00018609	Duration:	5.0 Week(s)	Date(s):	

Team:
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Grades:
9
Subjects:
Mathematics

Unit Focus

In this unit, students will solve one and two variable linear inequalities in various forms, including but not limited to one step and multi-step inequalities. Students will express the solution graphically and algebraically using set and interval notation. Students will understand how to use inequalities in real-world applications. Summative assessments may include projects, labs, and tests. Primary instructional materials for this unit include Algebra I, Glencoe/McGraw Hill, 2014.

Stage 1: Desired Results - Key Understandings

Established Goals

Common Core
Mathematics: 9

- Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. *CCSS.MATH.CONTENT.HSA.REI.D.12*
- Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. *CCSS.MATH.CONTENT.HSA.REI.B.3*

Transfer

T1 (T50) Based on an understanding of any problem, initiate a plan, execute it and evaluate the reasonableness of the solution.
T2 (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense.
T3 (T51) Examine alternate methods to accurately and efficiently solve problems.
T4 (T52) Use appropriate tools strategically to deepen understanding of mathematical concepts.
T5 (T22) Describe and/or solve problems using algebraic expressions, equations, inequalities, and functions.
T6 (T23) Use functions or equations to model relationships among quantities.
T7 (T23) Use functions or equations to model relationships among quantities.

Meaning

Understandings	Essential Questions

- Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *CCSS.MATH.CONTENT.HSF.IF.B.5*

U1 (U540) The choice of a mathematical tool depends upon the information you have and the information you want. **U2** (U550) Attention to detail, such as specifying units of measure and labeling, leads to clarity in expressing mathematical information. **U3** (U560) Patterns and structures are characterized by consistent relationships. **U4** (U203) Certain mathematical manipulations preserve the relationship in an expression or equation, even though they change the representation. **U5** (U205) Expressions, equations, inequalities, and functions use symbols to represent quantities, operations, and their relationships.	**Q1** (Q540) What tool(s) is appropriate for use with this model? **Q2** (Q551) How precise do my quantities need to be for my calculations to be accurate? **Q3** (Q552) Does my solution make sense? **Q4** (Q560) What is the pattern/structure in this problem? **Q5** (Q562) How do values and/or concrete models relate to each other? **Q6** (Q205) How can I represent this relationship as a function or equation? (Gr. 6-12) **Q7** (Q206) How do I evaluate this function or solve the equation? (Gr. 6-12)

Acquisition of Knowledge and Skill

Knowledge	Skills
	S1 Understand the relationship between interval notation and inequalities **S2** Solve simple and compound one variable linear inequalities **S3** Express solution of one variable in set and interval notation and graph the solution on a number line **S4** Graph two variable linear inequality **S5**

		Determine if a coordinate pair is part of the solution **S6** Apply two variable inequalities to real-world applications

Stage 3: Learning Plan

Coding	Code	Description of Learning Activity