

Unit 9- Solving Inequalities

Content Area: **Mathematics**
Course(s): **Algebra, Math 8**
Time Period: **March**
Length: **15 Days**
Status: **Published**

Unit Summary

The world is not exact. The concepts of almost, not more than, at least, etc. are explored mathematically in this unit. Students learn the mechanics of solving and graphing multi-step inequalities by connecting to the algorithms used to solve equations. They also explore how solving and graphing inequalities differ from equations. The students delve into solving and graphing compound inequalities, as well as graphing linear inequalities in 2 variables. Throughout the unit students are prompted to explore the infinite solutions represented by inequalities. Students develop models to describe and solve real world problems.

Standards

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.A-CED.A.1	Create equations and inequalities in one variable and use them to solve problems.
MA.A-REI.B	Solve equations and inequalities in one variable
MA.A-REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
CAEP.9.2.8.B.3	Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.
TECH.8.1.8.A.CS1	Understand and use technology systems.
TECH.8.1.8.A.CS2	Select and use applications effectively and productively.
TECH.8.1.8.D.CS2	Demonstrate personal responsibility for lifelong learning.

Student Learning Objectives

- Students will learn to solve inequalities using the four basic operations (in one variable).
- Students will learn to solve multi-step inequalities involving the distributive property, fractions, rational numbers, and variables on both sides (in one variable).
- Students will learn to solve compound inequalities (in one variable).
- Students will learn to translate word problems into inequalities and solve.
- Students will learn to use intersections and unions of sets when solving compound inequalities.
- Students will learn to apply and solve inequalities related to real-world situations.
- Students will learn to content additions include absolute value equations and inequalities.

Essential Questions

- How can we communicate situations that are not exact?
- What is the language of imbalance?
- How can you communicate that something is between two values?

Enduring Understandings

- Students will understand that things in life are rarely exact.
- Students will understand that comparison is a technique used to uncover patterns.

Application

- Students will be able to independently use their learning to distinguish between problems requiring equations and problems requiring inequalities.
- Students will be able to independently use their learning to apply knowledge of equations to inequalities.
- Students will be able to independently use their learning to state the similarities and differences between equations and inequalities.

Skills

Students will be skilled at:

- Solving one-variable inequalities.
- Solving compound inequalities.
- Graphing inequalities.