(Alg 1) Unit 2: Solving Linear Inequalities

Content Area: **Math**
Course(s): **Math**
Time Period: **October**
Length: **3 weeks**
Status: **Published**

Unit Overview

In this unit, students will learn about the following topics:

- Writing & graphing inequalities

- Solving inequalities using addition or subtraction

- Solving inequalities using multiplication or division

- Solving multi-step inequalities

- Solving compound inequalities

- Solving absolute value inequalities

Enduring Understandings

SWBAT:

- Write inequalities in one variable

- Graph inequalities in one variable

- Solve & graph one- and two-step inequalities using addition or subtraction

- Solve & graph one- and two-step inequalities using multiplication or division

- Solve & graph multi-step inequalities with variables on one or both sides

- Solve & graph compound inequalities (2 inequalities at once)

- Solve & graph absolute value inequalities

- Solving real-world problems that can be modeled by inequalities, compound inequalities, or absolute value inequalities

Essential Questions

How can we:

- write and graph linear inequalities?
- translate word sentences as inequalities?
- write linear inequalities in one variable from graphs?
- write word sentences as inequalities?
- solve inequalities using basic operations, including multiplying or dividing by negative numbers?
- use inequalities to solve real-world problems?
- solve multi-step inequalities with variables on one or both sides?
- solve compound inequalities in two parts or all at once?
- graph solutions to compound inequalities in one variable as either the overlap or intersection of two graphs?
- solve absolute value inequalities in one variable and determine when they have special solutions like no solution or infinitely many solutions?

Instructional Strategies & Learning Activities

- Guided Practice
- Daily Do Now
- Extra Practice & Puzzle Time (Resources)
- Scavenger Hunts
- Coloring Activities
- Task Cards (Around the World)
- Maze Activities
- Quizizz Online Assignments
- Kahoot! Online Games
- GimKit Online Games

Integration of 21st Century Themes and Skills

9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.
9.1.8.CDM.3	Compare and contrast loan management strategies, including interest charges and total principal repayment costs.
9.1.8.CP.1	Compare prices for the same goods or services.
9.1.8.FP.5	Determine how spending, investing, and using credit wisely contributes to financial well-being.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on

	others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

Technology & Design Integration

8.1.8.DA.5	Test, analyze, and refine computational models.
8.1.8.AP.4	Decompose problems and sub-problems into parts to facilitate the design, implementation, and review of programs.
8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.CS1	Understand and use technology systems.
TECH.8.1.8.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.
TECH.8.1.8.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.8.D.CS1	Apply the design process.

Interdisciplinary Connections

L.KL.8.2.A	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
L.KL.8.2.B	Gather vocabulary knowledge when selecting a word or phrase important to comprehension or expression.
L.VL.8.3.A	Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
L.VL.8.3.B	Analyze the impact of specific word choices on meaning and tone.
L.VL.8.3.C	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).
L.VL.8.3.D	Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.

L.VL.8.3.E	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
VPA.1.3.8.D.1	Incorporate various art elements and the principles of balance, harmony, unity, emphasis, proportion, and rhythm/movement in the creation of two- and three- dimensional artworks, using a broad array of art media and art mediums to enhance the expression of creative ideas (e.g., perspective, implied space, illusionary depth, value, and pattern).

Differentiation

Definitions of Differentiation Components:

- Content – the specific information that is to be taught in the lesson/unit/course of instruction.
- Process – how the student will acquire the content information.
- Product – how the student will demonstrate understanding of the content.
- Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.
- High-achieving students can complete sudoku puzzles and logic puzzles as extension activities.
- Limit number/difficulty of problems for low-achieving students to demonstrate mastery.
- Narrow down problem choice to core concepts for low-achieving students.
- Leveled group-based activities, determined by formative assessment.

Modifications & Accommodations

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.
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Benchmark Assessments

Schoolwide Benchmark assessments:

- Linkit Benchmarks (Form A in September, Form B in January, Form C in June): Linked to NJSLA standards

Additional Benchmarks used in this unit:

- IXL Diagnostic + continued practice during IXL periods

Formative Assessments

Formative Assessments used in this unit:

- Kahoot! Games

- Quizizz Games

- Homework

- Q & A

- Scavenger Hunts

- Coloring Activities

- Task Cards

- Partner Activities

Summative Assessments

Summative assessments for this unit:

- Chapter Test
- Quizzes

Instructional Materials

1. Big Ideas Math: Math & You 6th Grade Textbook
2. Quizizz
3. Kahoot!
4. Scavenger Hunts
5. Task Cards
6. Coloring Activities
7. GimKit

Standards

A.CED.A.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.
A.REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.