

TITLE OF LESSON

Algebra 1 Unit 1 Lesson 33 – Multiplicative Axiom of Inequality, Solving Inequalities  
*You Do Speak Math: Creation of the Individual*

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TIME ESTIMATE FOR THIS LESSON

One class period

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ALIGNMENT WITH STANDARDS

California – Algebra 1:

**1.0** Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable:

**1.1** Students use properties of numbers to demonstrate whether assertions are true or false.

**2.0** Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.

**3.0** Students solve equations and inequalities involving absolute values.

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MATERIALS

**Lesson 33 Homework** – Student Page

**Lesson 33 Homework Key** – Teacher Page

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LESSON OBJECTIVES

- To finish the explanation of the multiplicative axiom of inequality and to introduce solving inequalities
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FOCUS AND MOTIVATE STUDENTS

- 1) Homework Check – Stamp/initial complete homework assignments. Pass back graded work and have students place in folders.
  - 2) [Agenda](#) – Have students copy the agenda you posted.
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ACTIVITIES – INDIVIDUAL AND GROUP

1. Review – Review the Multiplicative axiom of inequality. If  $a < b$  and  $c > 0$  then  $ac < bc$  and if  $a > b$  and  $c > 0$  then  $ac > bc$  and if  $a < b$  and  $c < 0$  then  $ac > bc$  and if  $a > b$  and  $c < 0$  then  $ac < bc$ .
2. Application: Money – Begin with the first part of the axiom. Give some examples using money.
3. Discuss – Lead a discussion with the class regarding the meaning of this axiom. How do you know that  $5 * 6$  will always be greater than  $3 * 6$ ? Ask for some other numeric examples.
4. [Brainstorm](#) – Brainstorm for some additional examples outside of the realm of money.
5. Review – Restate the second part of the axiom.
6. Discuss – Lead a discussion on what this part means. Why does a negative number multiplied by a positive number equal a positive number?
7. Number Line – Demonstrate the principle using the number line.

8. Solving an Inequality – Introduce the idea of solving an inequality
  9. Example – Give an example e.g.  $5x - 3 > 2x + 69$
  10. Teacher Demo – Demonstrate the steps to solve the inequality (add 3 to each side, subtract  $2x$  from each side, divide by 3)
  11. Discuss Demo – At each step discuss why it is possible to manipulate each side of the inequality
  12. Class Examples – Do 5 more examples.
  13. Homework Review – Hand out **Lesson 33 Homework**. If there is time, students can get started on their homework.
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#### HOMEWORK

Complete **Lesson 33 Homework**, due tomorrow

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#### GROUP ROLES

Students will be working individually during this class period, unless a student needs help.

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#### DOCUMENTATION FOR PORTFOLIO

None