

Write and Solve Inequalities

Family Letter

Dear Family,

In this module, *Write and Solve Inequalities*, students will draw on their knowledge of inequalities and equations to build an understanding of writing, solving, and graphing one- and two-step inequalities. They will use this understanding to build fluency in solving and graphing one- and two-step inequalities.

What Did Students Learn Previously?

In previous modules the students learned to add, subtract, multiply, and divide rational numbers. The students have also learned to solve one-step addition, subtraction, multiplication, and division equalities.

What Will Students Learn in This Module?

One-Step Inequalities

- Students will draw on their knowledge of inequalities and solving one-step addition and subtraction equations to build understanding of solving and graphing one-step addition and subtraction inequalities. They will then use this understanding to build fluency to solve and graph one-step addition and subtraction inequalities.
- Students will draw on their knowledge of solving one-step addition and subtraction inequalities and solving one-step multiplication and division equations to build understanding of solving and graphing one-step multiplication and division inequalities. They will then use this understanding to build fluency in solving and graphing one-step multiplication and division inequalities.
- Students will draw on their knowledge of solving one-step multiplication and division inequalities to build understanding of writing addition, subtraction, multiplication and division inequalities.

Two-Step Inequalities

- Students will draw on their knowledge of solving one-step inequalities and solving two-step equations to build understanding of solving two-step inequalities. They will use this understanding to build fluency in solving two-step inequalities.
- For example, when solving an inequality, the Properties of Inequality would be used:

$$3x - 5 < 4$$

Use the Addition Property of Equality to add 5 to both sides.

$$3x < 9$$

Use the Division Property of Equality to divide both sides by 3.

$$x < 3$$

All of the solutions are less than 3.

What Vocabulary Terms Will Students Use?

Term	Definition
Addition Property of Inequality	If you add the same number to each side of an inequality, the inequality remains true.
Division Property of Inequality	When you divide each side of an inequality by a negative number, the inequality symbol must be reversed for the inequality to remain true.
inequality	An open sentence that uses $<$, $>$, $\neq$, $\leq$, or $\geq$ to compare two quantities.
Multiplication Property of Inequality	When you multiply each side of an inequality by a negative number, the inequality symbol must be reversed for the inequality to remain true.
Subtraction Property of Inequality	If you subtract the same number from each side of an inequality, the inequality remains true.
two-step inequality	An inequality that contains two operations.

How You Can Provide Support

- Support your child's understanding of Inequalities by asking them to use an inequality explain how to solve problems in everyday life.
 - Shopping:* Start with a predetermined amount of money and ask your child how many of an item they can buy. For example: If you start with \$10, how many pounds of apples at \$1.19 per pound you can buy.
 - Family trips:* Give the student an arrival time and ask your child how many miles per hour the family should average. For example, if the arrival time is in 6 hours what should the average miles per hour be greater than, if the destination is 330 miles away?
- Encourage your child to have a positive, growth-oriented attitude towards mathematics and their learning.
 - Encourage them to ask questions – both at home and in class. Sometimes, an answer to a question will generate more questions. That's how you know they are learning!
 - Encourage your child to embrace challenges and remind them that every challenge is an opportunity to learn something new.
 - Celebrate successes – both small and large.
- Contact me to arrange a time to discuss the specifics of your child's performance and how we can work together to help them succeed in this module.

Sincerely,

(Teacher's Name)

(Email/Phone)