

Introduction to Inequalities Class Work

 **You will be able to...** explain and graph simple inequalities, and discover a special property related to inequalities

★ Do Now:

Write a phrase, draw a symbol, or draw a picture to describe what each term means to you.

Less than:

Greater than:

Less than or equal to:

Greater than or equal to:

	Symbol	Graph	Numerical Example	Algebraic Example
Less Than				
Less Than or Equal to				
Greater Than				
Greater Than or Equal to				

**Write an expression in words to represent each inequality.
Then graph each on a number line. Identify at least 2 possible values for the variable.**

a. $3 < y$

b. $x < -8$

c. $z > 9$

d. $x \geq -7$

e. $k \leq -3$

f. $2 > r$

f. The cost of a new record player is at least \$99.

g. The temperature has not yet reached 70 degrees Fahrenheit.

Let's Discover A Cool Property About Inequalities!

<p>★A. Choose any two positive numbers. Place them on the number line.</p> <p>Write an inequality relating the numbers .</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st #</div> <div style="text-align: center;">2nd #</div> </div> <p>Multiply each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">-1 * 1st #</div> <div style="text-align: center;">-1 * 2nd #</div> </div>	<p>★B. Choose any two positive numbers. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st #</div> <div style="text-align: center;">2nd #</div> </div> <p>Divide each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st # / -1</div> <div style="text-align: center;">2nd # / -1</div> </div>
<p>★C. Choose any two negative numbers. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st #</div> <div style="text-align: center;">2nd #</div> </div> <p>Multiply each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">-1 * 1st #</div> <div style="text-align: center;">-1 * 2nd #</div> </div>	<p>★D. Choose any two negative numbers. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st #</div> <div style="text-align: center;">2nd #</div> </div> <p>Divide each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;">_____</div> <div style="text-align: center;">_____</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1st # / -1</div> <div style="text-align: center;">2nd # / -1</div> </div>

<p>★E. Choose a positive & a negative number. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> 1st #</div> <div style="text-align: center;"><u> </u> 2nd #</div> </div> <p>Multiply each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> -1 * 1st #</div> <div style="text-align: center;"><u> </u> -1 * 2nd #</div> </div>	<p>★F. Choose a positive & a negative number. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> 1st #</div> <div style="text-align: center;"><u> </u> 2nd #</div> </div> <p>Divide each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> 1st # / -1</div> <div style="text-align: center;"><u> </u> 2nd # / -1</div> </div>
<p>★G. Choose any number and 0. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <p>Multiply each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> -1 * 1st #</div> <div style="text-align: center;"><u> </u> -1 * 2nd #</div> </div>	<p>★H. Choose any number and 0. Place them on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> 1st #</div> <div style="text-align: center;"><u> </u> 2nd #</div> </div> <p>Divide each number by negative 1.</p> <p>Place the new numbers on the number line.</p> <p>Write an inequality relating the numbers.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><u> </u> 1st # / -1</div> <div style="text-align: center;"><u> </u> 2nd # / -1</div> </div>

✎ In each case, what happened when you multiplied or divided the numbers by a negative number?
What special rule can you create for solving inequalities?

Be Creative!

If you could use any song, movie, or TV show title to describe inequalities, what would it be & why?!