



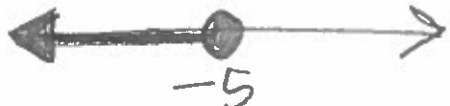
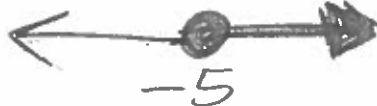


Name Teacher Pd _____ Date _____

Introduction to Inequalities

	Equation	Inequality
Words	A number x is 3.	All real numbers x that are less than 3.
Algebra	$x = 3$	$x < 3$
Graph		
Key Idea	An equation has <u>exactly one solution</u> that makes its statement true.	An inequality has <u>a set of solutions</u> that makes its statement true.
Solution (or Set)	The value for x could be <u>ONLY 3</u>	The value for x could be <u>but NOT 3</u> <u>2.99, -100, 2 > 3/4</u>

Choose a starting point for your solution set. Then write the inequality in words, algebra, and graph.
 (Note: I chose -5)

	<	>
Words	All real numbers x that are less than -5.	All real numbers x that are greater than -5.
Algebra	$x < -5$	$x > -5$
Graph		
	≤	≥
Words	All real #s x that are less than or equal to -5.	All real #s x that are greater than or equal to -5.
Algebra	$x \leq -5$	$x \geq -5$
Graph		






Key Items to Remember

- The symbol's mouth always opens towards the greater number.
- The line on your graph always points where the solution set is.
- "or equal to" means our symbol has a line under it and the graph's circle is closed. (No "or equal to" means no line and open circle.)

Steps to Move from Words → Algebra → Graph and Vice Versa

Words → Algebra	<ol style="list-style-type: none"> 1. Read from left to right. 2. Use the correct symbol.
Algebra/Words → Graph	<ol style="list-style-type: none"> 1. Identify starting point. 2. Choose open/closed circle. 3. Draw your line pointing to where the <i>solutions</i> are. <p>**It may be useful to (re)write the algebraic inequality with the variable first.</p>
Graph → Algebra	<ol style="list-style-type: none"> 1. Write the variable first. 2. Use the correct symbol. <p>**Make sure you describe where the <i>solutions</i> are in relation to the starting point. (Determine if the solution set or the starting point is greater - EAT THE GREATER #!)</p>

You Try Chart (in your groups)

Words	Algebra	Graph
All real numbers b that are greater than -2 .	$x > -2$	
All real #s h that are less than or equal to -1 .	$h \leq -1$	
All real #s x that are greater than or equal to -3 .	$x \geq -3$	
4 is greater than all real #s g .	$4 > g$ $g < 4$	
8 is less than all real numbers k .	$8 < k$ $k > 8$	

Optional: Summarize the steps/Write down any memory tricks you know.

- less than looks like L and when solutions are less than starting point, line points left. (less than, $<$, \leftarrow)
- "eat" the bigger #