



Introduction to Inequalities

1.D.1

	<i>Equation</i>	<i>Inequality</i>
<i>Words</i>	A number x is 3.	All real numbers x that are less than 3.
<i>Algebra</i>	$x = 3$	$x < 3$
<i>Graph</i>		
<i>Key Idea</i>	An equation has _____ that makes its statement true.	An inequality has _____ that makes its statement true.
<i>Solution (or Set)</i>	The value for x could be _____	The value for x could be _____

Choose a starting point for your solution set. Then write the inequality in words, algebra, and graph.

	$<$	$>$
<i>Words</i>		
<i>Algebra</i>		
<i>Graph</i>		
	\leq	\geq
<i>Words</i>		
<i>Algebra</i>		
<i>Graph</i>		


Key Items to Remember

- The symbol's mouth always opens towards the _____.
- The line on your graph always _____ where the _____ is.
- "or equal to" means our symbol _____ and the graph's circle is _____. (No "or equal to" means no _____ and _____ 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 .		
	$h \leq -1$	
		
	$4 > g$	
8 is less than all real numbers k .		

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