

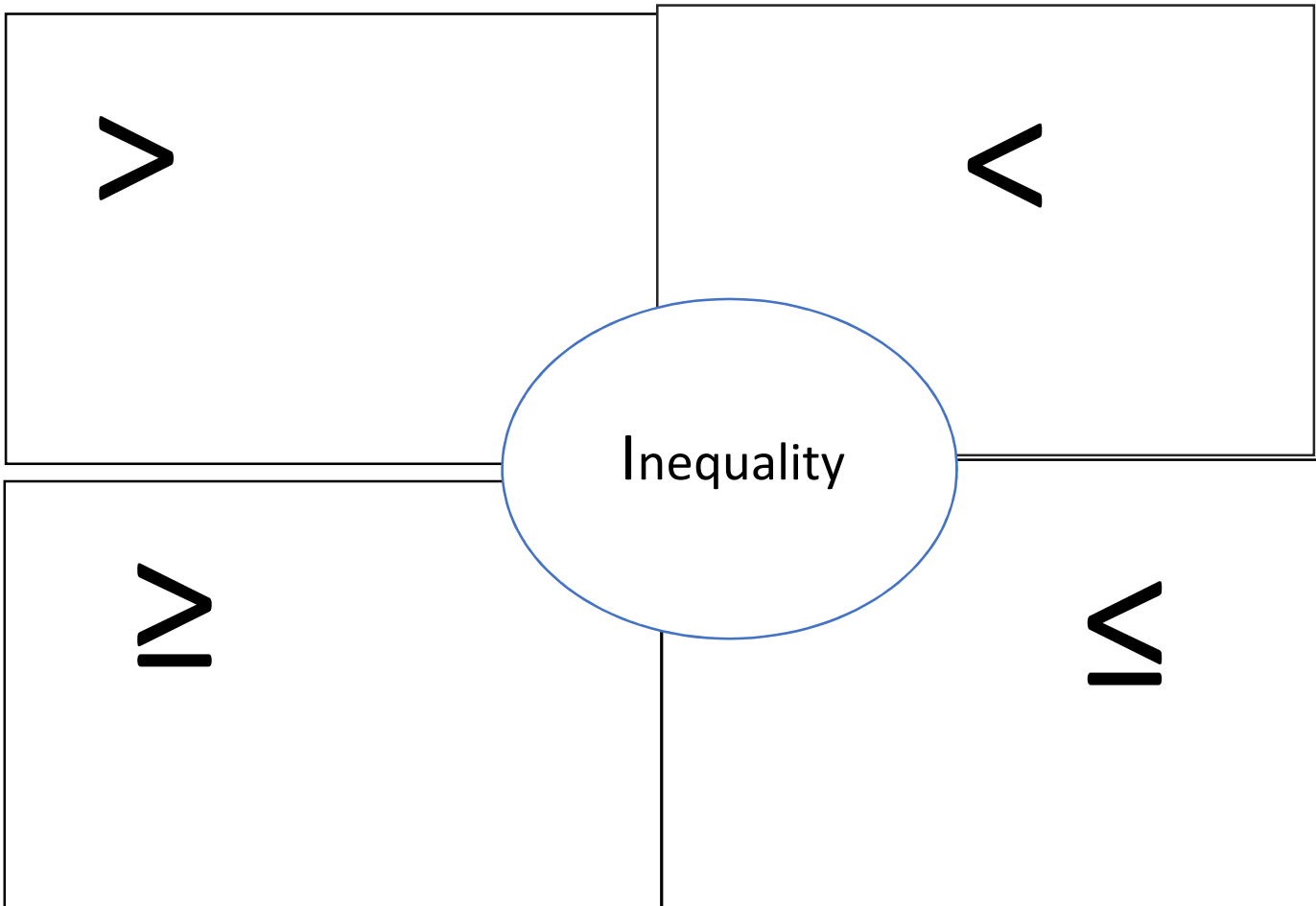
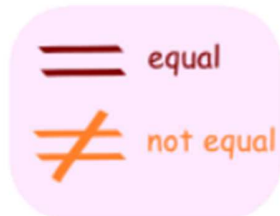
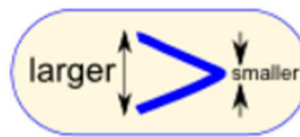
Model:

What is an inequality?

An inequality has infinitely many solutions.

What does infinitely mean?

Equality and Inequality



Think-Pair-Share

Write the following statements as an inequality.

- a) Your friend is *more than* 3 minutes late.

- b) The temperature is *at most* 2 degrees.

- c) You need *at least* 4 pieces of paper for your math homework.

- d) After playing a video game for 20 minutes, you have *fewer than* 6 points.

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Work with a partner.

a. Consider the statement “ x is a number such that $x < 2$.”

- Can the number be exactly 2? Explain.

- Circle each number that makes the statement true.

–5 –4 –3 –2 –1 0 1 2 3 4

- Write four other numbers that make the statement true.

_____, _____, _____, and _____.

b. Consider the statement “ x is a number such that $x \geq 1$.”

- Can the number be exactly 1? Explain.

- Circle each number that makes the statement true.

–5 –4 –3 –2 –1 0 1 2 3 4

- Write four other numbers that make the statement true.

_____, _____, _____, and _____.

Guided Practice

Symbol	Words	Example Use
=	equals	$1 + 1 = 2$
\neq	not equal to	$1 + 1 \neq 1$
>	greater than	$5 > 2$
<	less than	$7 < 9$
\geq	greater than or equal to	marbles ≥ 1
\leq	less than or equal to	dogs ≤ 3

Read the following statements

a) $x = 2$

b) $x \leq 2$

c) $x \geq 2$

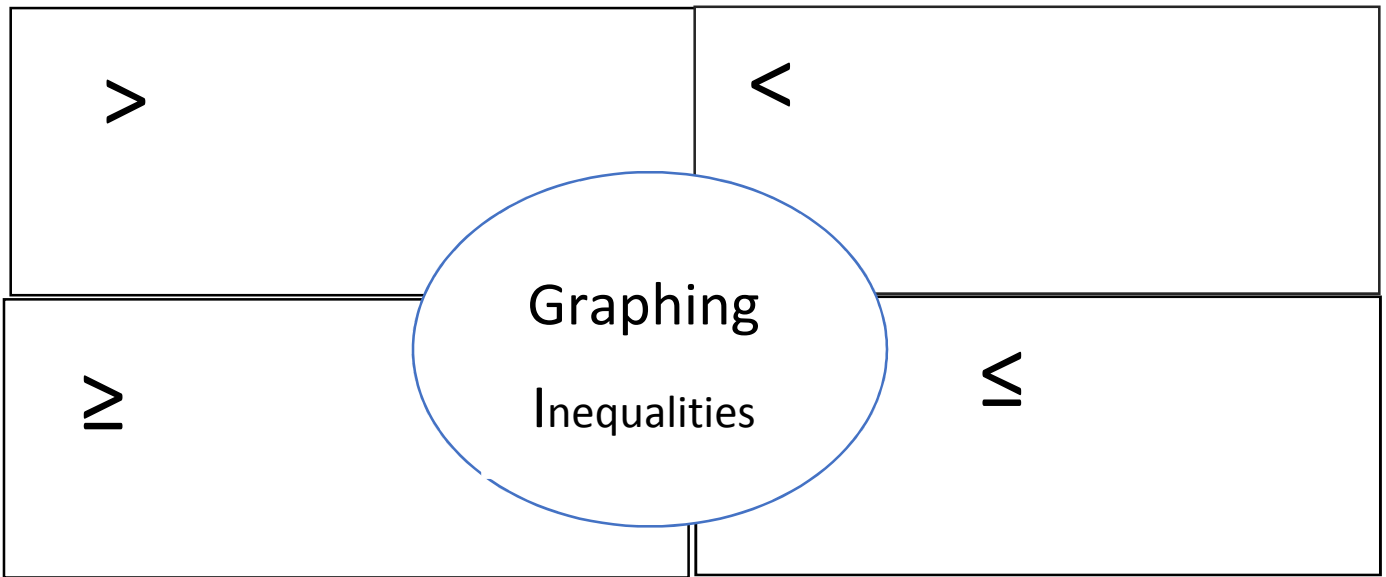
d) $x < 2$

e) $x > 2$

f) $x \neq 2$

g) $2 > x$

Model



Guided Practice:

Examples: Let's Graph each inequality on the number line.

1) $x < 5$

a) Will it be an open or closed circled circle? Justify your answer.

b) List three values that satisfy this inequality.

_____, _____, and _____

c) Graph the inequality on the number line.



2) $x \geq 5$

d) Will it be an open or closed circled circle? Justify your answer.

e) List three values that satisfy this inequality.

_____, _____, and _____

f) Graph the inequality on the number line.



Group Work

Examples: Let's Graph each inequality on the number line.

3) $x > 7$

g) Will it be an open or closed circled circle? Justify your answer.

h) List three values that satisfy this inequality.

_____, _____, and _____

i) Graph the inequality on the number line.



4) $x \geq 7$

j) Will it be an open or closed circled circle? Justify your answer.

k) List three values that satisfy this inequality.

_____, _____, and _____

l) Graph the inequality on the number line.



5) $x \leq -6$

m) Will it be an open or closed circled circle? Justify your answer.

n) List three values that satisfy this inequality.


_____, _____, and _____


o) Graph the inequality on the number line.





Independent Practice


Graph the solution set on the real number line.

a) $x > -3$ 


b) $x \leq -5$ 

c) $x \geq 4$ 

d) $x < 7$ 

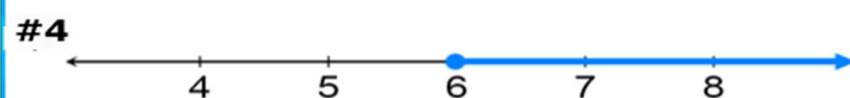
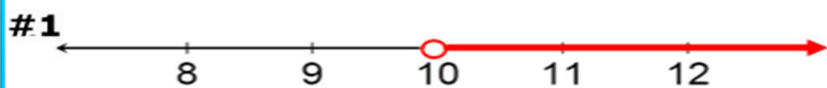
e) $x > 12$ 

f) $x \neq 3$ 

g) $2 > x$ 

Independent Practice

Write an inequality for each graph.



- | |
|----|
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |

Let's Reflect!

1) What are the similarities and differences between the inequalities $<$ and $>$?

2) What are the similarities and differences between the inequalities \leq and \geq ?

3) What are the similarities and differences between the inequalities \leq and $>$?

4) What are the similarities and differences between the inequalities $>$ and \geq ?

5) Big Ideas textbook (Green) Page 329 #s 5-10 and 17-20. Page 330#s 21-28, and 37-38.