U3 LT1/2 Solving Inequalities

LT 1: SWBAT explain the necessary steps needed in order to solve a linear inequality.
LT 2: SWBAT solve and graph solutions to linear inequalities.

Success Criteria:

Start Thinking…

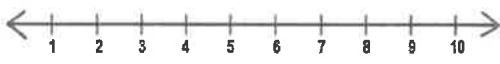Name three solutions to the following inequality.

$$x > 8$$

_____ _____ _____

Ex 1:

Name three solutions to the following inequality.

$$2x \leq 8$$

_____ _____ _____

Ex 2:

Graph the solution set to the following inequality

$$y < 7$$

When graphing solutions…

Words	Algebra	Graph
x is less than 2		
	$x > 2$	
	$x \geq 2$	

Quick Check:

Write the following as an inequality

1. A number y is less than five.

2. A number w plus 8 is greater than or equal to 3

Solve the inequality and graph the solution.

Ex 3: $x + 7 \geq 15$

Ex 4: $3x - 5 < 1$

Check at least 2 solutions

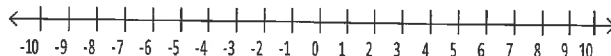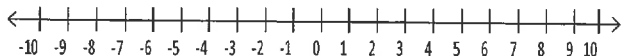Check at least 2 solutions

Ex 3: $-3x \geq 9$

Check at 1 solution

When multiplying, or dividing by a negative....

What inequality symbol would actually make this true?

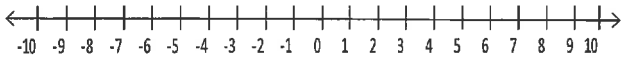**You Try... Solve and graph the solution.**
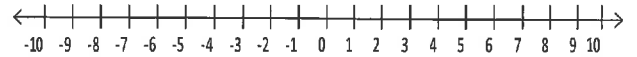   **1.** $x + 5 > 12$

2. $-9x - 10 \leq 26$

Example 3:

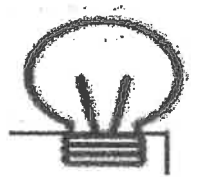Solve and graph the solution.
$$\frac{x}{2} + 10 \geq 13$$

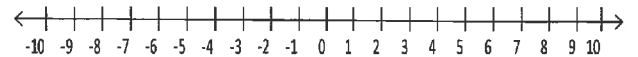**Example 4:** Solve and graph the solution.
$$3x - 6 < -3$$

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

You Try... Solve and graph the solution

1.) $6x \leq 30$

2.) $5x - 3 < 12$

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
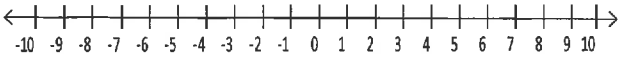
Example 5: Solve and graph the solution.
$$-8x \geq 64$$

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
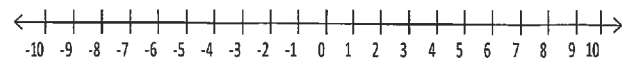
Example 6: Solve and graph the solution.
Example 7: Solve and graph the solution.
$$2 - x \geq 6$$
$$-2x + 2 < 16$$