Two-Step Inequalities

- We are still using inverse operations to isolate the variable.
- We have to UNDO what is being done to the variable.

Ex. 1	Words
$-2x - 5 < 3$	The variable is being MULTIPLIED by -2, and then SUBTRACT 5 from that product.
$\underline{+5 +5}$	We need to UNDO so we work **backwards**. FIRST we ADD 5 (to undo _____).
$\dfrac{-2x}{-2} < \dfrac{8}{-2}$	THEN we DIVDE by -2 (to undo _____).
$x > -4$	Since we divide by a _____, we _____ the symbol!

Ex. 2

$-5n + 3 > -7$

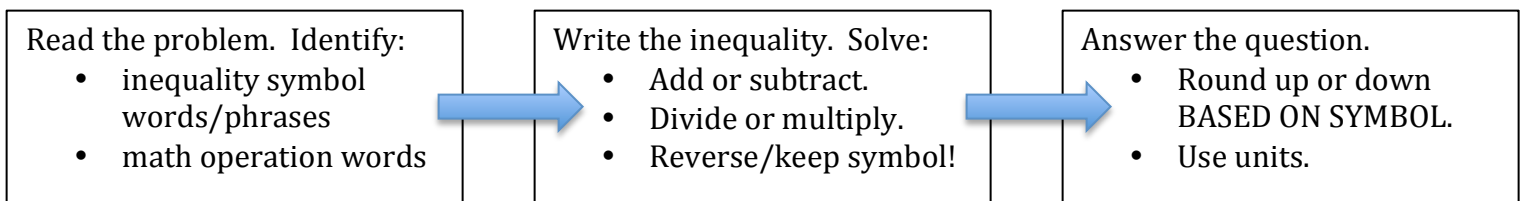Ex. 3

$\frac{y}{3} - 6 \le -4$

You Try 4

$6h - 1 < 11$

You Try 5

$-\frac{k}{5} + 7 \ge 6$

Key Ideas

- First, _____ or _____ to get rid of constant terms.

- Then, _____ or _____ to make the coefficient be 1.

- REVERSE THE SYMBOL if you multiply or divide by a _____!

2-Step Inequality Word Problems

Read the problem. Identify:	Write the inequality. Solve:	Answer the question.
• inequality symbol words/phrases • math operation words	• Add or subtract. • Divide or multiply. • Reverse/keep symbol!	• Round up or down BASED ON SYMBOL. • Use units.

Ex. 6
An airplane is at 10,000 feet when it starts to descend. It descends at a rate of 600 feet per minute. The wheels drop when the plane is at most 1,200 feet. After how many minutes would you expect the wheels to drop?

Ex. 7
Triniti had $500 in her bank account at the beginning of the summer. She wants to have no less than $200 in the account by the end of the summer. She withdraws $18 each week for expenses. How many weeks, w, can Trinity withdraw this much from her account?

You Try 8
StuCo is considering planning a fundraising event at a banquet hall, which costs $700 to rent. If they charge $15 per ticket, how many tickets, t, do they need to sell in order to raise a minimum of $1000?