Key

Station 1 (2.1)

I can write linear inequalities

Write the sentence as an inequality

1. A number x is greater than 3.

$x > 3$

2. Fifteen is no more than a number t divided by 5.

$15 \leq \frac{t}{5}$ or $\frac{t}{5} \geq 15$

3. Thirteen is at least the difference of a number v and 1.

$13 \geq v - 1$

4. One-half of a number y is more than 22.

$\frac{y}{2} > 22$

5. Three times a number y is more than 22.

$3y > 22$

6. Four is no less than the quotient of a number x and 2.1.

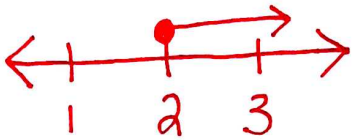
$4 \geq \frac{x}{2.1}$

Station 2 (2.1)

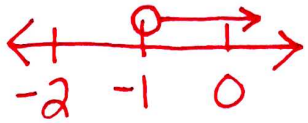
I can sketch the graphs of linear inequalities

Graph the inequality.

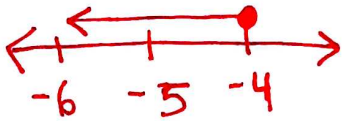
1. $x \geq 2$



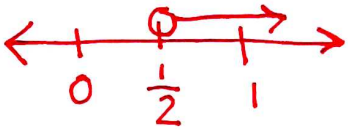
2. $-1 < t$



3. $v \leq -4$



4. $\frac{1}{2} < p$



I can write linear inequalities from graphs

Write an inequality that represents the graph.

1.

$x \leq 4$

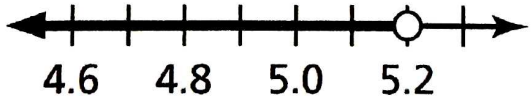
2.

$x > -3$

3.

$x \geq 1.3$

4.



$x < 5.2$

Station 3 (2.2)

I can solve inequalities using addition and subtraction

Solve the inequality.

1. $h - (-2) \geq 10$

$h + 2 \geq 10$

$-2 \quad -2$

$\boxed{h \geq 8}$

2. $j + 9 - 3 < 8$

$j + 6 < 8$

$-6 \quad -6$

$\boxed{j < 2}$

3. $10 \geq 3p - 2p - 7$

$10 \geq p - 7$

$+7 \quad +7$

$\boxed{17 \geq p \text{ or } p \leq 17}$

I can use inequalities to solve real-life problems

1. An NHL hockey player has 59 goals so far in a season. What are the possible numbers of additional goals the player can score to match or break the NHL record of 92 goals in a season?

$\geq$

$59 + g \geq 92$

$-59 \quad -59$

$\boxed{g \geq 33}$

He would need at least 33 additional goals.

Station 4 (2.3)

I can solve inequalities by multiplying or dividing by *positive* numbers

Solve the inequality.

1. $\frac{-20}{10} \leq \frac{10n}{10}$

$-2 \leq n$ or $n \geq -2$

2. $\cdot \frac{5}{4}$ $20 \geq \left(\frac{4}{5}w\right)\frac{5}{4}$

$\frac{100}{4} \geq w$

$25 \geq w$ or $w \leq 25$

3. $\cdot \frac{3}{8}$ $-16 \leq \left(\frac{8}{3}x\right)\cdot\frac{3}{8}$

$-6 \leq x$ or $x \geq -6$

I can solve inequalities by multiplying or dividing by *negative* numbers

Solve the inequality.

1. $\frac{-6t}{-6} < \frac{12}{-6}$

$t > -2$

2. $\cdot -3$ $\left(-\frac{n}{3}\right) \geq (1)\cdot -3$

$n \leq -3$

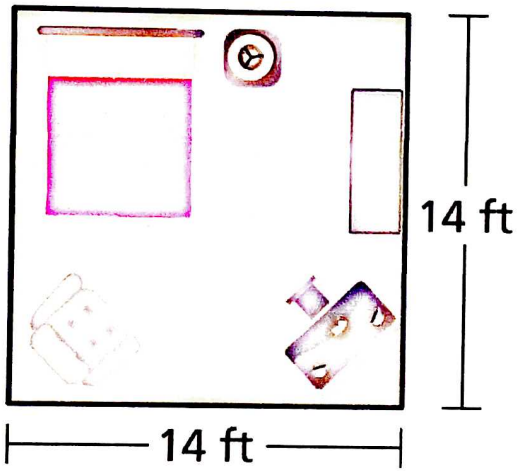
3. $\cdot -2$ $(-8) < \left(-\frac{1}{2}x\right)\cdot -2$

$16 > x$ or $x < 16$

Station 5 (2.3)

I can use inequalities to solve real-life problems

1. You have $700 to buy new carpet for your bedroom. Write and solve an inequality that represents the costs per square foot that you can pay for the new carpet. Specify the units of measure in each step.



$x \rightarrow$ cost per square foot

$(14 \cdot 14)x \leq 700$

$\frac{196x}{196} \leq \frac{700}{196}$

$x \leq 3.57$

Cost: $3.57 or less/sq.ft

2. The U.S. Mint pays $0.02 to produce every penny. How many pennies are produced when the U.S. Mint pays more than $6 million in productions costs?

$x \rightarrow$ # of pennies

$\frac{0.02x}{0.02} > \frac{6\,000\,000}{0.02}$

$x > 300\,000\,000$

More than 300 million pennies

Station 6 (2.4)

I can solve multi-step inequalities

Solve the inequality.

1. $2x - 3 > 7$
   $+3 \quad +3$

   $\frac{2x}{2} > \frac{10}{2}$

   $x > 5$

2. $-\frac{p}{8} + 9 > 13$
   $-9 \quad -9$

   $-8 \cdot \left(-\frac{p}{8}\right) > 4 \cdot -8$

   $p < -32$

3. $\frac{6}{-6} \geq \frac{-6(a+2)}{-6}$

   $-1 \leq a + 2$
   $-2 \quad -2$

   $-3 \leq a$ or $a \geq -3$

I can use multi-step inequalities to solve real-life problems

1. A woodworker wants to earn at least $25 an hour making and selling cabinets. He pays $125 for materials. Write and solve an inequality that represents how many hours the woodworker can spend building the cabinet. (Cabinet is $500)

   $25h + 125 \leq 500$
   $-125 \quad -125$

   $\frac{25h}{25} \leq \frac{375}{25}$

   $h \leq 15$

   He can spend at most 15 hours building the cabinet.