





## II-3 Hands-On Lab

### Model Equations with Variables on Both Sides

<b>Key:</b>	 = 1	 = -1	 = x	 = -x
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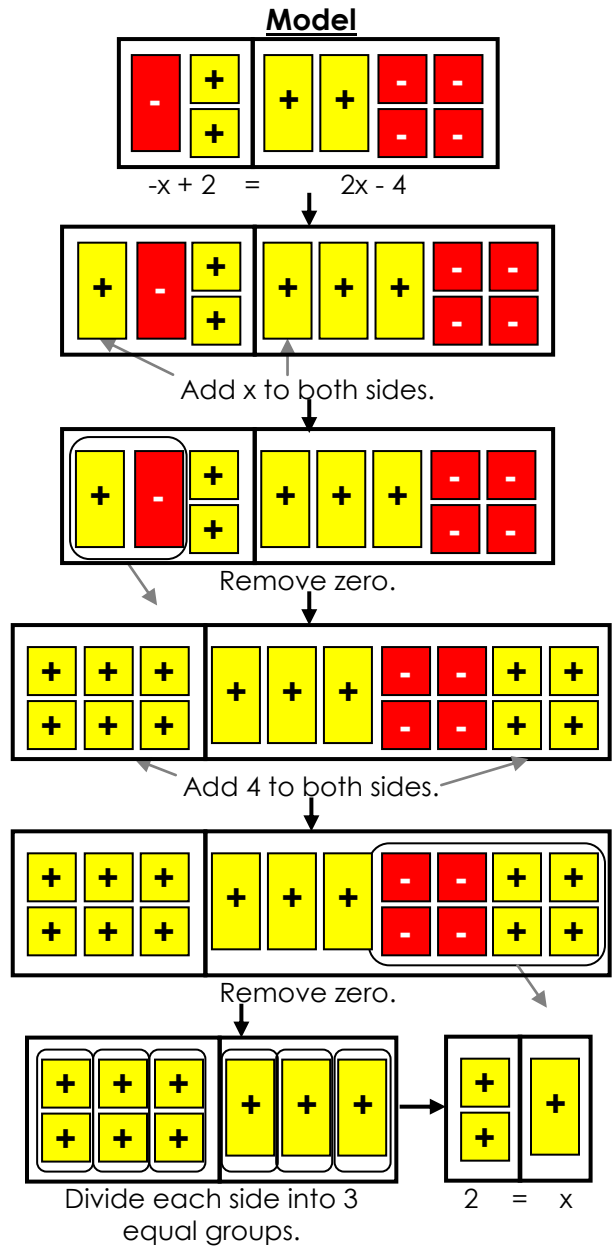
**Remember:**  
It will not change the value of an expression if you add or remove zero.

To solve an equation with variables on both sides of the equal sign, you must first add or subtract to eliminate the variable term from one side of the equation.

$$-x + 2 = 2x - 4$$

**Activity**

Model and solve the equation  $-x + 2 = 2x - 4$ .



Inverse Operations

$$\begin{array}{r}
 -x + 2 = 2x - 4 \\
 +x \qquad +x \\
 \hline
 2 = 3x - 4 \\
 +4 \qquad +4 \\
 \hline
 6 = 3x \\
 \frac{6}{3} = \frac{3x}{3} \\
 2 = x
 \end{array}$$

Model and solve the equations. (4 pts each)

Model

1.  $x + 3 = -x - 3$

Inverse Operations

Model

2.  $3x = -3x + 18$

Inverse Operations

Model

3.  $6 - 3x = -4x + 8$

Inverse Operations

Model

4.  $3x + 3x + 2 = x + 17$

Inverse Operations

5. Why must you isolate the variable terms by having them on only one side of the equation? (2 pts)