

Activity 5 Assessment

Solving Linear Equations Using Models

Solving Linear Equations using Models

Represents equations using algebra tiles

These tiles show the equation $x - 4 = 8$.

$$x \quad \begin{smallmatrix} -1 & -1 & -1 & -1 \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 & 1 \end{smallmatrix}$$

Solves one-step equations using a model and verifies the solutions

To solve $x - 4 = 8$, I added 4 one-tiles to each side.

$$x \quad \begin{smallmatrix} -1 & -1 & -1 & -1 \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 & 1 & 1 \end{smallmatrix}$$

When I removed the zero pairs, what I had left was $x = 12$.

To check my answer, I replaced the x -tile in my original model with 12 one-tiles. When I removed zero pairs, I ended up with 8 one-tiles on the left side, which matches the right side.

Solves multi-step equations using a model and verifies the solutions

These tiles represent $-2x + 8 = 2$.

$$\begin{smallmatrix} -x & -x \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 \end{smallmatrix}$$

I added 8 negative one-tiles to each side to create zero pairs on the left. When I removed the zero pairs, I had:

$$\begin{smallmatrix} -x & -x \end{smallmatrix} = \begin{smallmatrix} -1 & -1 & -1 \\ -1 & -1 & -1 \end{smallmatrix}$$

I flipped the tiles on both sides and organized them in 2 equal groups. It looked like this:

$$\begin{smallmatrix} x & x \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{smallmatrix}$$

I could see that $x = 3$.

Creates an equation to represent a word problem, solves it using a model, and explains what the solution represents

I used x to represent the cost of each pair of socks. My equation was $4x + 7 = 15$.

$$\begin{smallmatrix} x & x & x & x \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 \end{smallmatrix}$$

$$\begin{smallmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 \end{smallmatrix}$$

I added 7 negative one-tiles to each side. After removing zero pairs, I got:

$$\begin{smallmatrix} x & x & x & x \end{smallmatrix} = \begin{smallmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 \end{smallmatrix}$$

I grouped the tiles on each side in 4 equal groups and saw that $x = 2$. Each pair of socks cost \$2.

Observations/Documentation