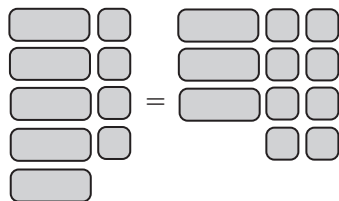
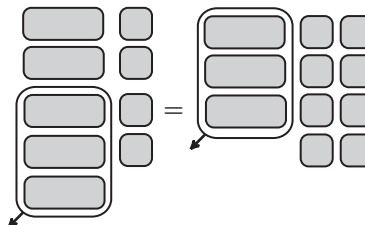
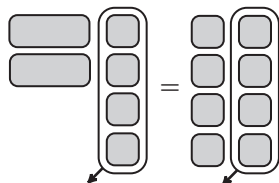
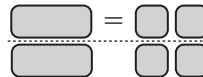


LESSON
2.5**Investigating Algebra Activity: Modeling Equations with Variables on Both Sides***For use before the lesson "Solve Equations with Variables on Both Sides"***Materials:** algebra tiles**QUESTION****How can you use algebra tiles to solve an equation with a variable on both the left and the right side of the equation?****EXPLORE****Solve an equation with variables on both sides**Solve $5x + 4 = 3x + 8$.**STEP 1** Model $5x + 4 = 3x + 8$ using algebra tiles.**STEP 2** You want to have x -tiles on only one side of the equation, so subtract three x -tiles from each side.**STEP 3** To isolate the x -tiles, subtract four 1-tiles from each side.**STEP 4** There are two x -tiles, so divide the x -tiles and 1-tiles into two equal groups. So, $x = 2$.**DRAW CONCLUSIONS****Use algebra tiles to model and solve the equation.**

- $4x + 3 = 3x + 7$
- $2x + 8 = 11 + x$
- $5x + 9 = 8x + 6$
- $7x + 6 = 9x + 2$
- Copy and complete the equations and explanations.

$$2x + 19 = 7x + 4$$

$$2x + 19 - \underline{\quad ? \quad} = 7x + 4 - \underline{\quad ? \quad}$$

$$19 = \underline{\quad ? \quad} + 4$$

$$19 - \underline{\quad ? \quad} = 5x + 4 - \underline{\quad ? \quad}$$

$$\underline{\quad ? \quad} = 5x$$

$$\underline{\quad ? \quad} = x$$

Original equation
 Subtract $\underline{\quad ? \quad}$ from each side.
 Simplify.
 Subtract $\underline{\quad ? \quad}$ from each side.
 Simplify.
 Divide each side by $\underline{\quad ? \quad}$ and simplify.