Name _____ Date _____

LESSON 2.3

Investigating Algebra Activity: Modeling Two-Step Equations

For use before the lesson "Solve Two-Step Equations"

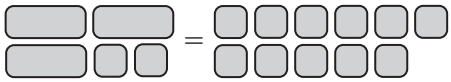
Materials: algebra tiles

QUESTION **How can you use algebra tiles to solve two-step equations?**

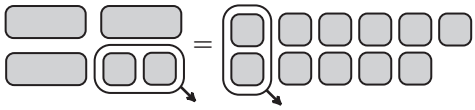
EXPLORE **Solve a two-step equation**

Solve $3x + 2 = 11$.

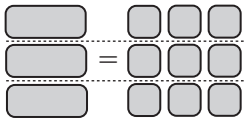
STEP 1 Model $3x + 2 = 11$ using algebra tiles.



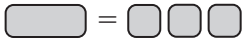
STEP 2 Remove two 1-tiles from each side.



STEP 3 There are 3 x-tiles, so divide each side into 3 equal groups.

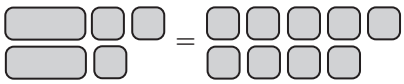


STEP 4 An x-tile is equal to three 1-tiles. So, the solution of $3x + 2 = 11$ is 3.



DRAW CONCLUSIONS

1. Write the equation modeled by the algebra tiles.



Use algebra tiles to model and solve the equation.

2. $2x + 5 = 13$ **3.** $5x + 1 = 11$ **4.** $3x - 4 = 8$ **5.** $4x + 3 = 7$

6. An equation and explanation that correspond to each step in the Explore are shown below. Copy and complete the equations and explanations.

$3x + 2 = 11$	Original equation
$3x + 2 - \_?\_ = 11 - \_?\_$	Subtract $\_?\_$ from each side.
$3x = \_?\_$	Simplify.
$\frac{3x}{3} = \frac{?}{3}$	Divide each side by $\_?\_$.
$x = \_?\_$	Simplify. Solution is $\_?\_$.

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