MATH UP

Name:_____ Date: _____

2 Solving Equations

What You Learned

Learning Goal

I can solve simple equations involving one variable.

Lesson Summary

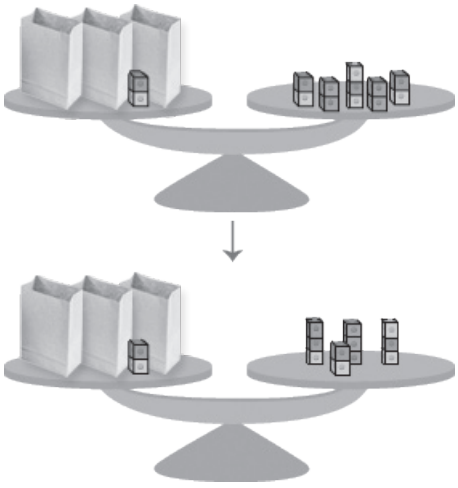
- Since an equation is a balance, you can solve it by modelling the equation and keeping the balance.

  - You can model the balanced equation with algebra tiles. Arrange the tiles to show the parts of the equation that balance each other.

$3 \times n + 2 = 11$

$n = 3$

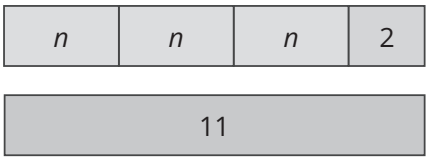
  - You can model the balanced equation with a pan balance with an equal number of blocks in each bag. You can think about how many blocks are in each bag.



$3 \times n + 2 = 11$

$n = 3$

- You can model the balance with a bar model.



$3 \times n + 2 = 11$
$n = 3$

- Sometimes you can solve an equation by guessing, testing your solution, and then coming up with a better guess.

- Sometimes you can solve an equation by thinking about the steps that transformed the original number into the final number and performing those steps in reverse order.

  For example, if $3 \times n + 2 = 11$, then *something* plus 2 is equal to 11. That something must be 9.

  $3 \times n = 9$

  $9 \div 3 = 3$, so $n = 3$

Key Terms

algebra tiles: small square and rectangular tiles used to represent numbers and variables; a small square tile is used to represent 1, and a rectangular tile is used to represent a variable

equation: a mathematical sentence that is balanced around an equal symbol; for example, $4 + 4 = 8$, $4 + z = 6 + 2$, and $3 \times m = n$ are equations

solve an equation: to determine the value of an unknown in an equation, for example, the value of t in $4 + t = 10$

variable: a letter, shape, or other symbol that stands for a number; in the equation $3 + a = 12$, a is a variable