NAME   DATE   PERIOD

Lesson 7 Summary

In this lesson, we worked with two ways to show that two amounts are equal: a balanced hanger and an equation. We can use a balanced hanger to think about steps to finding an unknown amount in an associated equation.

The hanger shows a total weight of 7 units on one side that is balanced with 3 equal, unknown weights and a 1-unit weight on the other. An equation that represents the relationship is $7 = 3x + 1$.

$7 = 3x + 1$
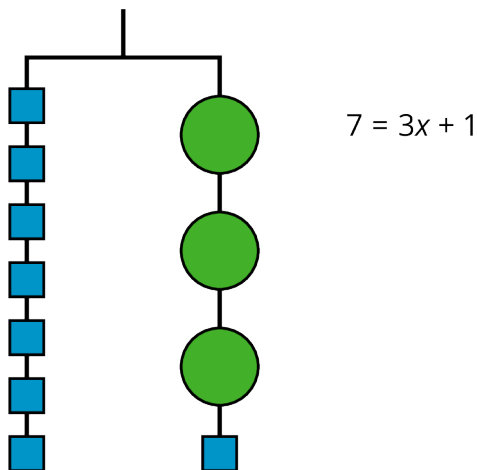
We can remove a weight of 1 unit from each side and the hanger will stay balanced. This is the same as subtracting 1 from each side of the equation.
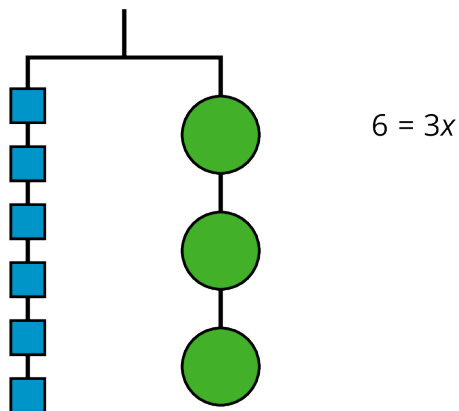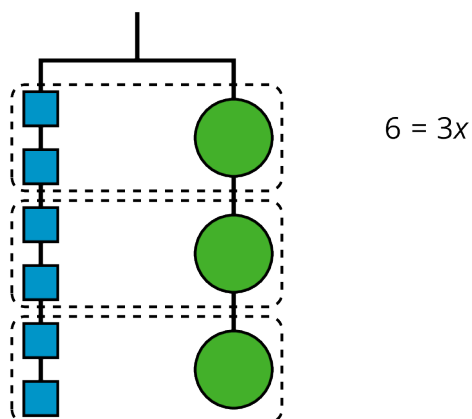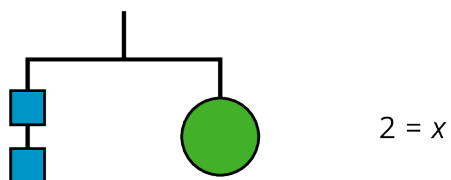

$7 - 1 = 3x + 1 - 1$
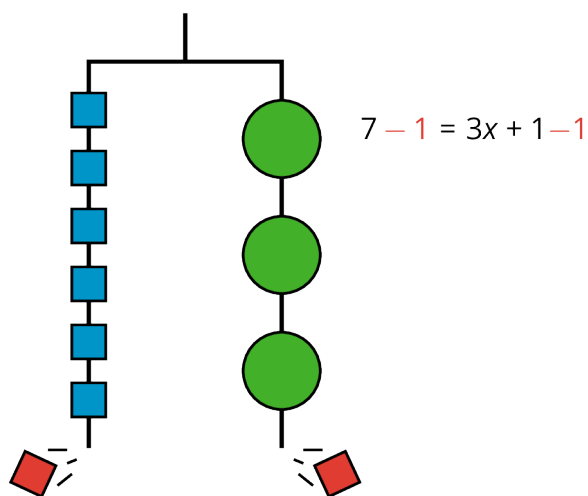
An equation for the new balanced hanger is $6 = 3x$.

$6 = 3x$

So the hanger will balance with $\frac{1}{3}$ of the weight on each side: $\frac{1}{3} \cdot 6 = \frac{1}{3} \cdot 3x$.

$6 = 3x$

The two sides of the hanger balance with these weights: 6 1-unit weights on one side and 3 weights of unknown size on the other side.

$2 = x$

Here is a concise way to write the steps above:

$7 \quad = 3x + 1$
$6 \quad = 3x$ after subtracting 1 from each side

$2 \quad = x$ after multiplying each side by $\dfrac{1}{3}$