Inquiry Lab

Solve One-Step Addition and Subtraction Equations

Inquiry **HOW can bar diagrams or algebra tiles help you solve an equation?**

In a recent year, 19 of the 50 states had a law banning the use of handheld cell phones while driving a school bus. Determine how many states did *not* have this law.

Hands-On Activity 1

You can represent this situation with an equation.

Step 1 The bar diagram represents the total number of states and the number of states that have passed a cell phone law. Fill in the missing information.

⎵ states	
states with a law	**states that do not have a law**
⎵ states	?
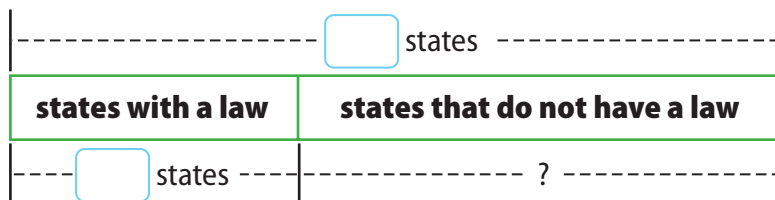
Step 2 Write an equation from the bar diagram. Let *x* represent the states that do not have a cell phone law for school bus drivers.

$$19 + x = 50$$

Step 3 Use the *work backward* strategy to solve the equation. Since $19 + x = 50$, $x = 50 - 19$. So, $x = \boxed{}$.

Check $19 + \boxed{} = 50$ ✔

So, $\boxed{}$ states did *not* have a law banning the use of cell phones by bus drivers.

Work with a partner to solve each problem.

1. Draw a bar diagram and write an addition equation to represent the following situation. Then solve the equation.

   The sum of a number and four is equal to 18.

   Equation: _____   Solution: $x =$ _____

2. **CCSS Use Math Tools** Jack collects postage stamps. He sold 7 of his stamps and had 29 stamps left. Complete the bar diagram below. Then write and solve a subtraction equation to find the number of stamps Jack had at the beginning.
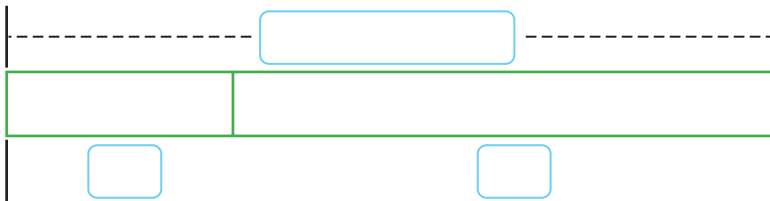
   Equation: _____   Solution: $n =$ _____

   So, Jack had ☐ stamps at the beginning.

3. Suppose Jack sold 15 stamps and had 21 stamps left. How would the bar diagram change?

   _____

   _____

4. **CCSS Reason Abstractly** Suppose Jack had 40 stamps in the beginning and sold 7 of them. How would the bar diagram change? What equation could you write to represent the situation?

   _____

   _____