

## Dear Family,

Your child is learning to understand how to subtract positive and negative integers.

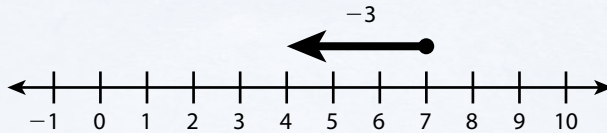


Addition and subtraction are inverse operations. You can write any subtraction problem as an addition problem. Here's an example:

$$\begin{array}{r} \text{Subtraction problem:} \quad 7 \quad - \quad 3 \quad = \quad 4 \\ \text{Addition problem:} \quad \quad 7 \quad + \quad (-3) \quad = \quad 4 \end{array} \left. \vphantom{\begin{array}{r} \text{Subtraction problem:} \\ \text{Addition problem:} \end{array}} \right\} \text{same result}$$

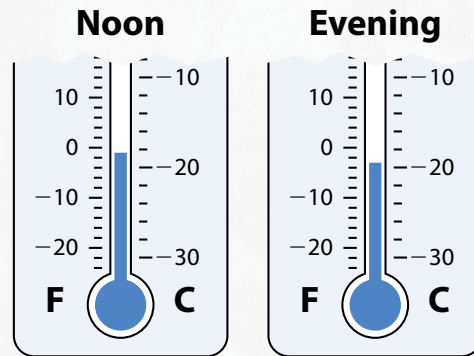
Keep the same first number.   
 Use the opposite of the second number.   
 Use the inverse operation.

This means that if you know how to add positive and negative integers, you know how to subtract them.



Consider the following example:

The temperature is  $-1^{\circ}\text{F}$  at noon. In the evening, the temperature is  $-3^{\circ}\text{F}$ . What is the difference in the temperatures?



On the next page you will see a way your child may find the difference in the temperatures.



## Understand Subtraction of Positive and Negative Integers: Sample Solution

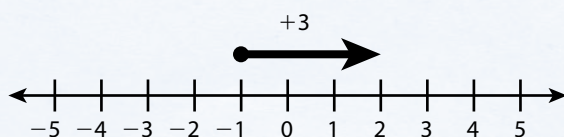
The temperature is  $-1^{\circ}\text{F}$  at noon. In the evening, the temperature is  $-3^{\circ}\text{F}$ . What is the difference in the temperatures?

Write a subtraction problem and use a number line to model an equivalent addition problem.

To do this, keep the first number the same, change subtraction to addition, and add the opposite of the second number. You can do this because subtracting a number is the same as adding its opposite.

$$-1 - (-3) = -1 + 3$$

Now you can use a number line to find the sum.



Solve the addition problem:  $-1 + 3 = 2$ .

**Answer:** The result is 2, meaning that the difference between the temperature of  $-1^{\circ}\text{F}$  at noon and  $-3^{\circ}\text{F}$  in the evening is  $2^{\circ}\text{F}$ .

