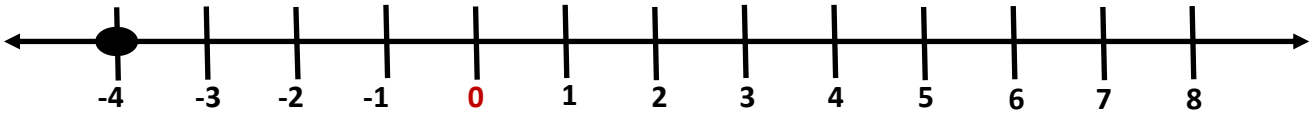
Homework Help
@ PIMA COUNTY PUBLIC LIBRARY

Grades 4-7: Using Number Lines to Add and Subtract Integers

- A **number line** is similar to a ruler or measuring stick. It can be divided into pieces, and **it can go both directions from zero to show positive and negative integers**.
- A number line is especially helpful when you're trying to **add or subtract negative integers.**

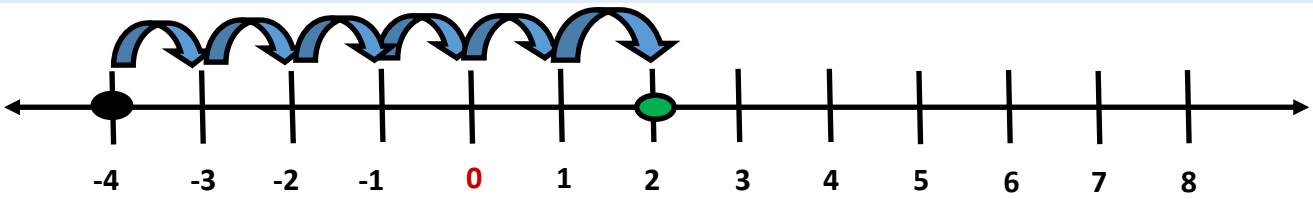
Let's say we want to solve this problem: **- 4 + 6**

- Our first step is to make a number line that goes in both directions from zero.
- We put a dot on - 4 to show that is the first number.

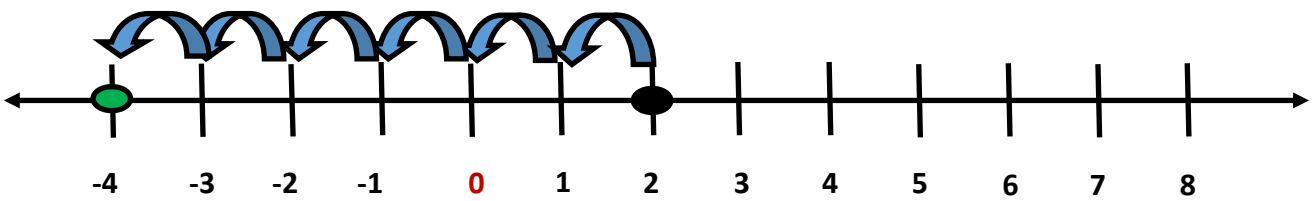


- Our next step is to see whether the problem asks us to add or divide. The + shows this is an addition problem.
- **Any time we add a positive integer, we move to the right, or up, on the number line.**
- We start at - 4 and move to the right six places.
- We land on 2. We can also call this number + 2, but for positive integers, you don't need to put the plus sign.

- 4 + 6 = 2



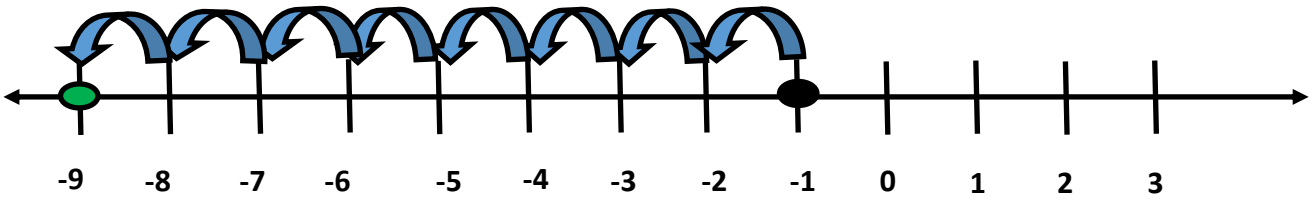
- Notice what happens when we solve: 2 - 6
- In this case, we start with our dot on 2. **Because the problem asks us to subtract, we move to the left, or down the number line, six places.**
- Where do we land?



Grades 4-7: Using Number Lines to Add and Subtract Integers

Now let's try a problem where we **start with a negative integer and then subtract**: -1 - 8

- Our first step is to make a number line.
- We want to **leave plenty of space to the left of zero** since we will be starting with a negative integer and then **subtracting, which means moving to the left**.
- We put a dot on - 1 to show that is the first number.
- Next, **because we are subtracting**, **we move 8 spots to the left, or down**, on the number line.
- We land at **-9**, so that is our answer!



It's helpful to know that the above problem, - 1 - 8, is the same as -1 + (- 8). In other words, **if we are asked to add a negative integer, that means we subtract, or go to the left.** The answer will still be - 9.

For our last example, let's **subtract a negative integer from a positive integer**: 2 - (- 3)

- Notice that it looks like there are **two minus signs right next to each other**.
- These two cancel each other out. In other words, when you subtract a negative integer, you add instead. So the problem becomes 2 + 3.
- We probably don't even need the number line to solve this one. 2 + 3 = 5!

To sum up:

⇒ **Add** a positive **integer** by **moving to the right** on the number line.

⇒ **Add** a negative **integer** by **moving to the left** on the number line.

⇒ **Subtract** an **integer** by **adding** its opposite.

For More on This Topic:

◊ https://www.youtube.com/watch?v=Dfytkh_lYME&t=169s

◊ https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-add-and-subtract/cc-7th-add-and-sub-integers/v/adding-integers-with-different-signs

◊ https://www.youtube.com/watch?v=4dwbHgXd8r8