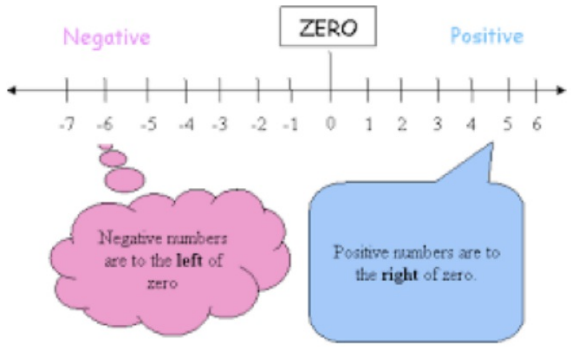
Math
Monday
11/28/16

Unit 4!

- Today we will begin Unit 4, which is all about integers.
- We will be covering standard 6.NS7
  - Apply and extend previous understandings of numbers to the system of rational numbers.
    - Understand ordering and absolute value of rational numbers.
- CCSS.MATH.CONTENT.6.NS.C.5
- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation…..
  - Look at http://www.corestandards.org/Math/Content/6/NS/
- Goal: To understand and be able to add, subtract, multiply, and divide integers; to be able to solve real-world problems involving integers; to understand their value on the number line.
- We want to be able to understand the value of different integers, so that we can eventually use them in algebra!



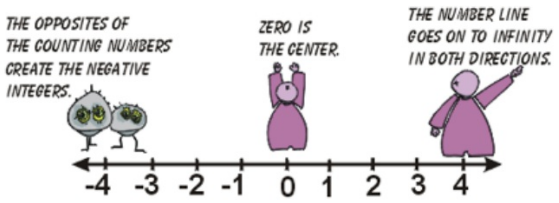
Today

- Today we will be taking a look at the number line and integer rules for math functions with positive and negative numbers.

What is an Integer?

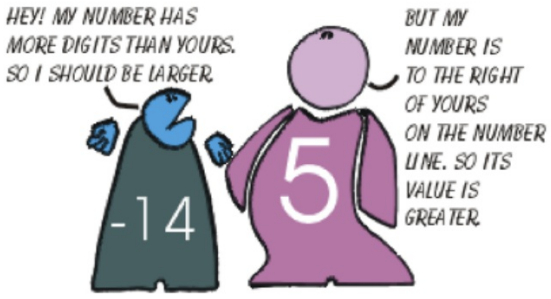
- Definition:

- Integers are the set of whole numbers and their **opposites**. Whole numbers *greater* than zero are called **positive integers**. Whole numbers *less* than zero are called **negative integers**. The integer zero is neither positive nor negative, and has no sign.



The Rules

- In a moment, you'll be working with your table mate with some counter chips.
  - Please make sure the counter chips stay on your desk, and that they do not end up on the floor.



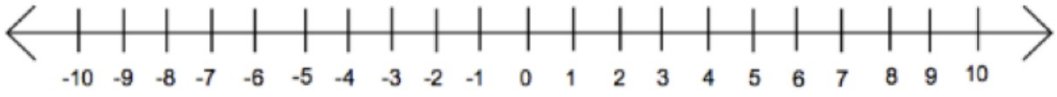
Using Counter Chips

- Modeling positive and negative numbers can help us to understand how to add and subtract them. Working with the number line can also help with this, so we are going to do both.

- In addition to using the counter chips, you'll receive a whiteboard. Draw a number line on the whiteboard when you get it.

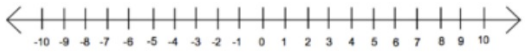
Your Number Line

- It should look like this



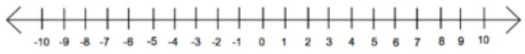
Understanding the Number Line

- Zero separates positive and negative.
- As you move to the right of zero, the numbers get bigger in value.
- As you move to the LEFT of zero, what happens?
  - Numbers DECREASE in value.



Understanding the Number Line

- For example:
  - Is positive 9 larger or smaller than 10?
  - Is negative 9 larger or smaller than negative 10?



Understanding the Number Line

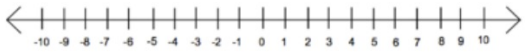
- -10 or negative 10 is like saying that I lost 10 dollars.
    - If I lost 10 dollars (-10) but Ms. Krivanka only lost 9 dollars (-9), who has more? Which one is greater in value? -9, or -10?
- If I gained 10 dollars, and Ms. K gained 9 dollars, who has more?

Understanding the Number Line

- Now here is where your counter chips come in.
  - What if I earned 10 dollars, and then lost 9 dollars? Where would I end up on the number line?
  - What if I spent 5 dollars after that?

Understanding the Number Line

- Model the following:
- -10 + 2
- -8 + 4
- +5 - 8
- 0 - 5



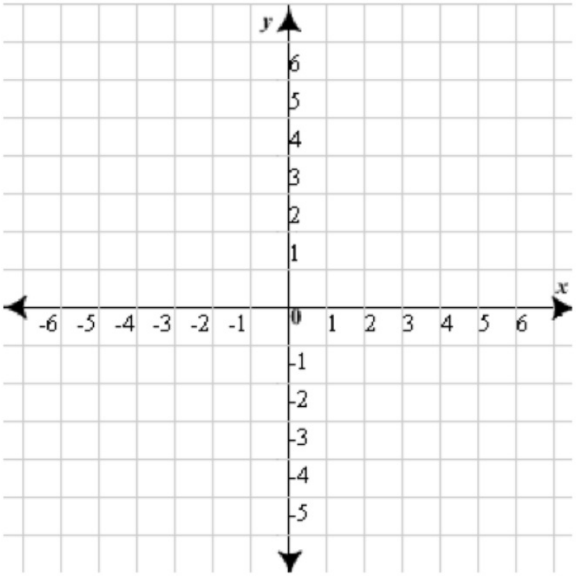
Math
Tuesday
11/29/16

Today

- Today we are going to take another look at coordinate planes, to help us better understand integers.

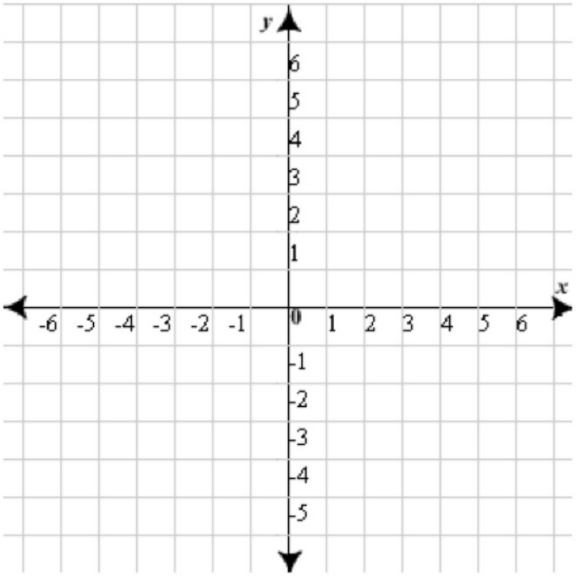
Coordinate planes, again

- Remember how we labeled each quadrant? Lets do that again, quickly.
  - Quadrants are labeled 2 ways. Via their sign, and via the quadrant number.
  - Each quadrant has a value for X and a value for Y.
  - Knowing whether X or Y is positive or negative, can tell you right away where your point is going to be.



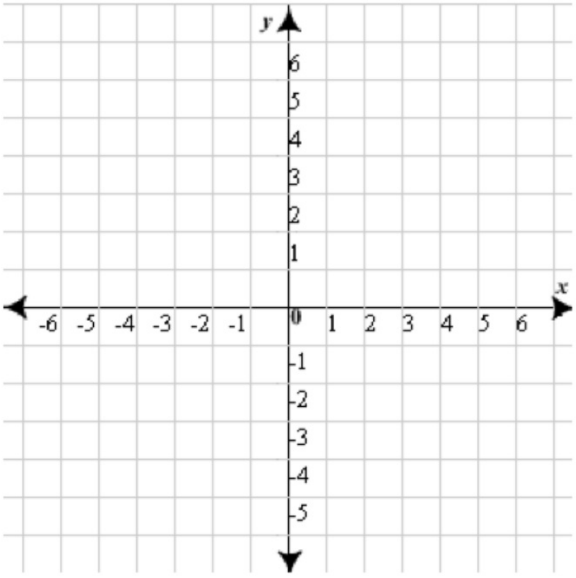
Coordinate planes, again

- For example:
  - What quadrant is point (-3, -3) going to be in?
    - well, which quadrant is X and Y both negative?
      - Quadrant III !



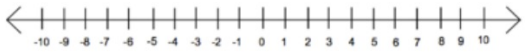
Coordinate planes, again

- On a piece of paper, write the quadrant of each of the following points
  - (3, 4)
  - (-3, -4)
  - (-3, 4)
  - (3, -4)
  - What do you notice?
    - Something as simple as the change of a sign on one number, can drastically change the location of the point on the coordinate plane.
- In a moment, you'll receive some practice problems. Before you write the answer, figure out what the signs of your answer will be.
  - This can also help you to check your answers!
  - Remember, coordinates are always in the format (x,y)



Word Problems

- What if I ran 10 miles?
  - ….then walked backwards for 1 mile? How far did I go?
  - 11 miles. You can't walk negative distance. So mathematically, we went 10 mi + |-1| =
    - 10 + 1 = 11



Math
Wednesday
11/30/16

Today…

- We are going to play a game. You will need to get into your groups of 4, and sit around one or two tables. You will have 1 minute to move into your groups.
- In a moment, you'll receive a whiteboard, cloth, and marker.
- The team with the most points at the end wins.

Question 1

- Katherine is very interested in cryogenics (the science of very low temperatures). With the help of her science teacher she is doing an experiment on the affect of low temperatures on bacteria. She cools one sample of bacteria to a temperature of -51°C and another to -76°C. What was the temperature difference in the two experiments?

Question 2

- On Tuesday the mailman delivers 3 checks for $5 each and 2 bills for $2 each. If you had a starting balance of $25, what is the ending balance?

Question 3

- You owe $225 on your credit card. You make a $55 payment and then purchase $87 worth of clothes at Macy's. What is the integer that represents the balance owed on the credit card?

Question 4

- If it is -25F in St Paul, Minnesota and it is 75F in Honolulu, Hawaii, what is the temperature difference between the two cities?

Question 5

- During the football game, Justin caught three passes. One was for a touchdown and went 52 yards. The other was for a first down and was for 17 yards. The other was on a screen pass that did not work so well and ended up a gain of -10 yards. What was the total yardage gained by Justin on the pass plays?

Question 6

- James plays in the backfield of the Big Town football team. Last week he ran four plays from the halfback position. He made "gains" measured in yards of 3, 4, 1, and 5. What were his average yards per gain? Round your answer to the nearest tenth of a yard.

Question 7

- In golf, the average score a good player should be able to achieve is called "par." Par for a whole course is calculated by adding up the par scores for each hole. Scores in golf are often expressed at some number either greater than or less than par. Ms. Floop is having a pretty good day at the Megalopolis City Golf Club. Her score so far after 15 holes is -3. If par for 15 holes is 63, what is her score?

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Question 8

- It was a very freaky weather day. The temperature started out at 9°C in the morning and went to -13°C at noon. It stayed at that temperature for six hours and then rose 7°C. How far below the freezing point (0°C) was the temperature at 6 p.m.?

Question 9

- You run a paper delivery route. You received a $22 check and 3 - $14 checks from customers today. You also had to refund 1- $5 bill. What is the total that you made today?

Question 10

- A monkey sits on a limb that is 25 ft above the ground. He swings up 10 ft, climbs up 6 ft more then jumps down 13 ft. How far off the ground is the monkey now?

Question 11

- Mary has $267 in her checking account. She writes checks for $33, $65, and $112. What is the balance in her account now?

Question 12

- A submarine dove 836 ft. It rose at a rate of 22 ft per minute. What was the depth of the submarine after 12 minutes?