Algebra 1
Lesson 1-4

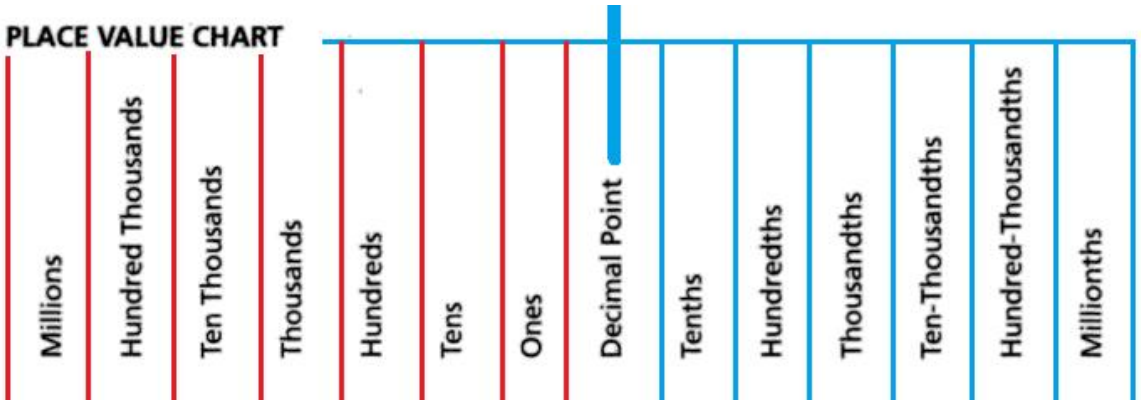
A Basic Introduction to Decimals

There are many different ways to depict numbers. While we have already covered different types of integers and such, we will now begin to cover rational numbers that don't fall into the integer category.

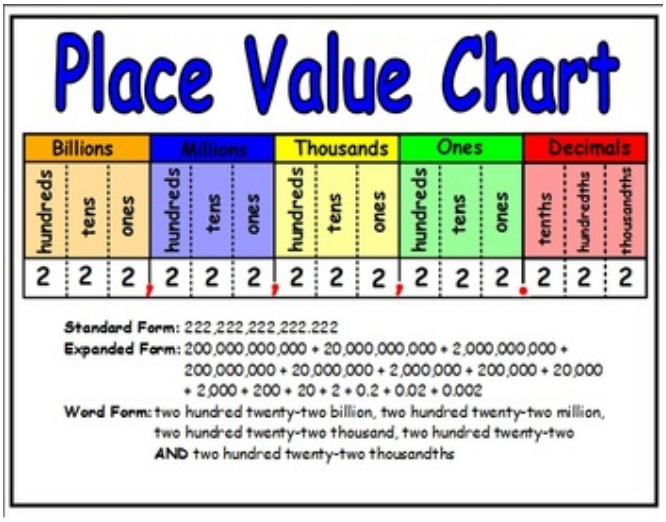
In particular, we will start off with decimals.
There are three distinct parts of any number with a decimal.

3.2

For example, the "3" represents the **whole number**.
The "." represents the *decimal*.
The "2" represents the part of the whole.
This number should be read as "**three** *and* two tenths"



Place Value is a term that is related to decimals because it establishes what the PLACE (as in where each digit is located) and the VALUE (as in how much each digit is actually worth) that is associated with it.



The “Magic Zero”

The number zero is an interesting number. Often it can mean nothing. Like literally nothing. Ask Siri to divide zero by zero. Hilarity will ensue, guarantee. But anyway …

In terms of decimals and place value, however, it can be incredibly important.
Let’s take the number 0.7 as an example.
By placing a 0 to the right of the 7, I can create the number 0.70, which is what we call an equivalent decimal. An equivalent decimal is one that has the same value as another even if they look slightly different.
However, by placing the zero to the left of the 7, I create the number 0.07, which is NOT equivalent. It is not an equivalent fraction because the value of the 7 changes. Originally, with 0.7, it is in the tenths spot, while in 0.07, it is now in the hundredths spot. In the tenths spot, it has a value of seven tenths, while in the hundredths spot, it is ten times smaller, at seven hundredths.

The term equivalent decimal is very important, as well as understanding which zeroes are important.

0.7 = 0.70 = 0.7000 = 0.7000000000000
0.7 does not equal 0.07 because the place and thus the value of the 7 changes
0.7 does not equal 0.71 because while the place and value of the 7 stays the same, the 1 in the hundredths spot changes the overall value of the number.