Some Statistics Vocabulary:

Measures of Central Tendency (the 3 M's):

- Mean
- Median
- Mode

Gives and indication of where the "middle" of the data is.

Section 12-3: Analyzing Data

Measures of Central Tendency:

- **Mean** $\frac{\text{Sum of data}}{\text{\# of data items}}$ Symbol for Mean: $\bar{x}$ "x bar"
- **Median** The middle # or the mean of the middle two #'s (#'s must be in order!) If there are two #'s in the middle due to an even number of data, the mean is the mean of the middle two #'s.
- **Mode** The # or #'s that occur the most often

  Another way to say this is that it's the # or #'s that appear MORE than the other numbers. Not just #'s that appear more than once.

What is the mode of this set of data?

41, 47, 46, 47, 39, 41, 39, 46

39, 39, 41, 41, 46, 46, 47, 47

NO MODE

If numbers all appear with the same frequency there is no mode.

What is the mode of this set of data?

13, 17, 21, 17, 13, 21, 13

13, 13, 13, 17, 17, 21, 21

MODE = 13

You can have more than one mode if more than one number appear an equal amount and that amount is more than the other numbers

Given a set of data, how many Modes could there be?

- None
- One
- Many

Find the Mean, Median, and Mode of this set of data.

2,13, 27, 19, 21, 8, 14, 25, 15, 32

$\overline{x}$ = 17.6

Median = $\frac{15+19}{2} = 17$

Mode = None

Using the graphing calculator to find median and mean:

2,13, 27, 19, 21, 8, 14, 25, 15, 32

1. Enter the data into a list (usually L_1) → STAT → 1:Edit...
2. Press STAT
3. Arrow to CALC
4. 1: 1-Var Stats
5. ENTER

If you don't have a graphing calculator:

- find by hand
- use the internet (see my blog)
- use spreadsheet software

Other statistics we will discuss are:

- Outlier
- Percentiles

Set 1: 16, 23, 30, 18, 19, 85, 23, 17, 9, 14

Outlier: An item that is substantially different from the other items in the set.

What statistic is usually affected the most by an outlier?

Usually the Mean

If there is an outlier what could this indicate?

- A mistake was made collecting the data
- A piece of equip needs to be checked
- Data is ok there is just one of the values that is quite different from the others