**TOPIC: STATISTICS**

When you get a big set of data there are all sorts of ways to mathematically describe the data. The term "average" is used a lot with data sets. Mean, median, and mode are all types of averages. Together with range, they help describe the data.  
  
**Definitions:**  
  
**Mean**- When people say "average" they usually are talking about the mean. You can figure out the mean by adding up all the numbers in the data and then dividing by the number of numbers. For example, if you have 12 numbers, you add them up and divide by 12. This would give you the mean of the data.  
  
**Median**- The median is the middle number of the data set. It is exactly like it sounds. To figure out the median you put all the numbers in order (highest to lowest or lowest to highest) and then pick the middle number. If there is an odd number of data points, then you will have just one middle number. If there is an even number of data points, then you need to pick the two middle numbers, add them together, and divide by two. That number will be your median.  
  
**Mode** - The mode is the number that appears the most. There are a few tricks to remember about mode:  
  
If there are two numbers that appear most often (and the same number of times) then the data has two modes. This is called **bimodal**. If there are more than 2 then the data would be called multimodal. If all the numbers appear the same number of times, then the data set has no modes.  
  
They all start with the letter M, so it can be hard to remember which is which sometimes. Here are some tricks to **help you remember**:

* **Mean** - Mean is the average. It's also the meanest because it take the most math to figure it out.
* **Median** - Median is the middle. They both have a "d" in them.
* **Mode** - Mode is the most. They both start with "mo".

**Range**- Range is the difference between the lowest number and the highest number. Take, for example, math test scores. Let's say your best score all year was a 100 and your worst was a 75. Then the rest of the scores don't matter for range. The range is 100-75=25. The range is 25.

**Example problem finding mean, median, mode and range:**  
  
Find the mean, median, mode and range of the following data set:  
  
9,4,17,4,7,8,14  
  
**Finding the mean:**  
  
First add the numbers up: 9+4+17+4+7+8+14 = 63  
  
Then divide 63 by the total number of data points, 7, and you get 9. The mean is 9.  
  
**Finding the median:**  
  
First put the numbers in order: 4, 4, 7, 8, 9, 14, 17  
  
The middle number is 8. There for the median is 8.  
  
**Finding the mode:**  
  
Remember the mode is the number that appears the most. It can help to put the numbers in order so we don't miss anything: 4, 4, 7, 8, 9, 14, 17  
  
Four appears twice and the rest of the numbers only appear once. The mode is 4.  
  
**Finding the range:**  
  
The lowest number is 4. The highest number is 17.  
  
Range = 17 - 4  
  
Range = 13

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