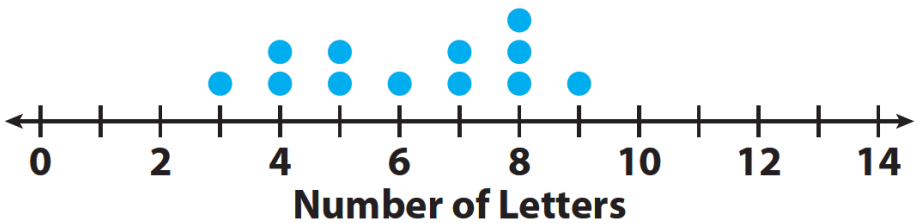


## Interpreting Statistical Models

***There are important features in each of the 8 models that you learned in the Different Types of Statistical Models lesson. We will go over these features in this lesson.***

### 1) Dot Plot



Credit: [www.onlinemath4all.com](http://www.onlinemath4all.com)

From a dot plot, you can figure out the range, mean, median and mode of a dataset.

**Range** - Take the value of the largest dot (furthest on RIGHT) and subtract it from the value of the smallest dot (furthest on LEFT).

**Mean** - Count the number of dots for each number and MULTIPLY it by the value. After summing those up, divide it by the TOTAL number of dots.

**Median** - Find the dot in the middle of the dataset. The value for this dot is the median.

**Mode** - The value that has the most dots is the mode of the dataset.

## 2) Stem-and-Leaf Plot

Stem	Leaf
1	6, 7
2	8, 3, 6
3	4, 5, 9, 5, 5, 8, 5
4	7, 7, 7, 8

Credit: [www.intmath.com](http://www.intmath.com)

From a stem-and-leaf plot you can find the range, mean, median and mode of a dataset.

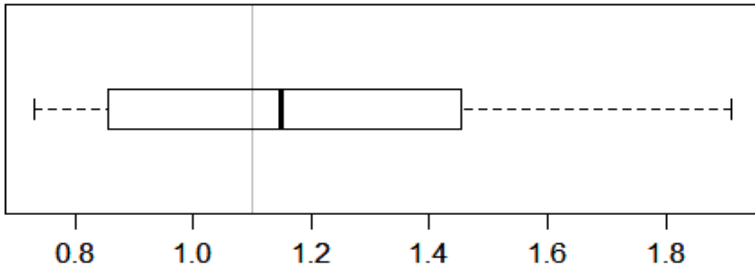
**Range** - The largest value of the plot - The smallest value of the plot

**Mean** - All of the values added together by the TOTAL number of values in a plot

**Median** - The middle value of the plot

**Mode** - The number that appears the most in the plot

### 3) Box-and-Whisker Plot



Credit: stats.stackexchange.com

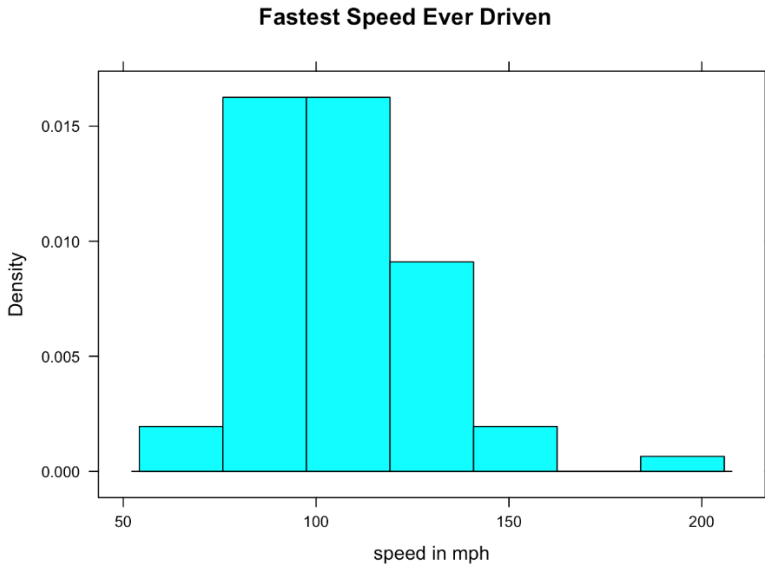
From a box-and-whisker plot, you can find the range, median and interquartile range of a dataset.

**Range** - The whisker furthest on the RIGHT (furthest data value on RIGHT) - The whisker furthest on the LEFT (furthest data point on the LEFT)

**Median** - The value at the DARK line in the middle of the box

**Interquartile Range** - The value at the RIGHT edge of the box - The value at the LEFT edge of the box

## 4) Histogram



Credit: asq.org

From a histogram, you can find the range, mean, median and mode of a dataset.

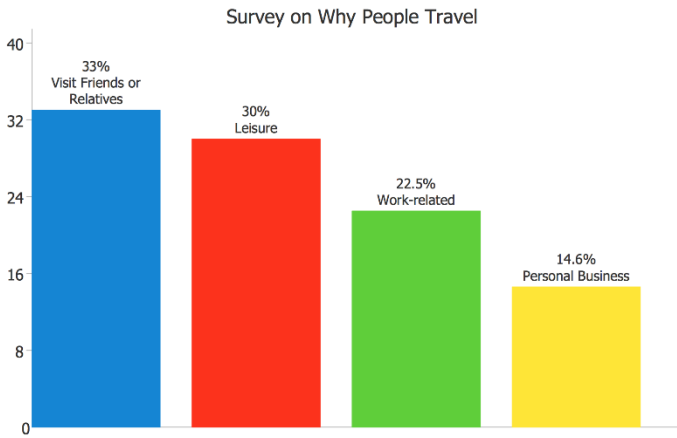
**Range** - The highest value in the dataset -  
The smallest value in the dataset

**Mean** - How tall each column is multiplied  
with the value that corresponds with it for  
each value summed up/EACH data value

**Median** - The middle value of the dataset  
(the specific value underneath each  
column)

**Mode** - The value that corresponds to the  
highest column

## 5) Bar Graph



Credit: obfuscata.com

From a bar graph, you can find the range, mean, median and mode of a dataset.

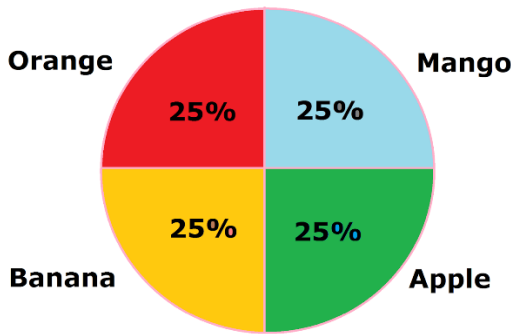
**Range** - Largest value on the right -  
Smallest value on the left

**Mean** - The frequency multiplied by each data value summed up divided by the total number of values

**Median** - The middle value of the dataset

Mode - The value corresponding to the highest column

## 6) Pie Chart

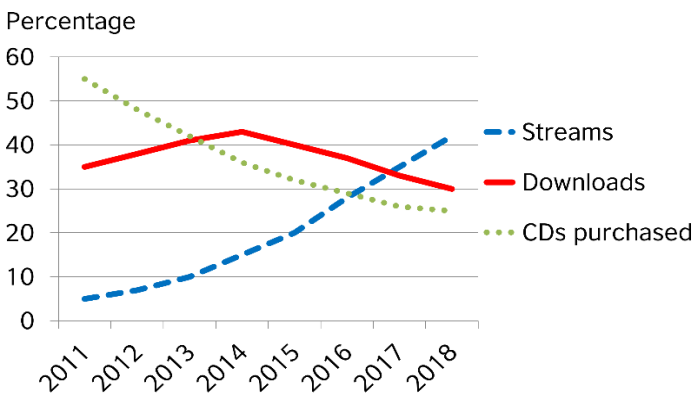


Credit: [blogspot.com](http://blogspot.com)

In a pie chart, you can see the percentage of the chart that belong to each category. This allows you to find out what category has the smallest value, largest value and the range.

## 7) Line Graph

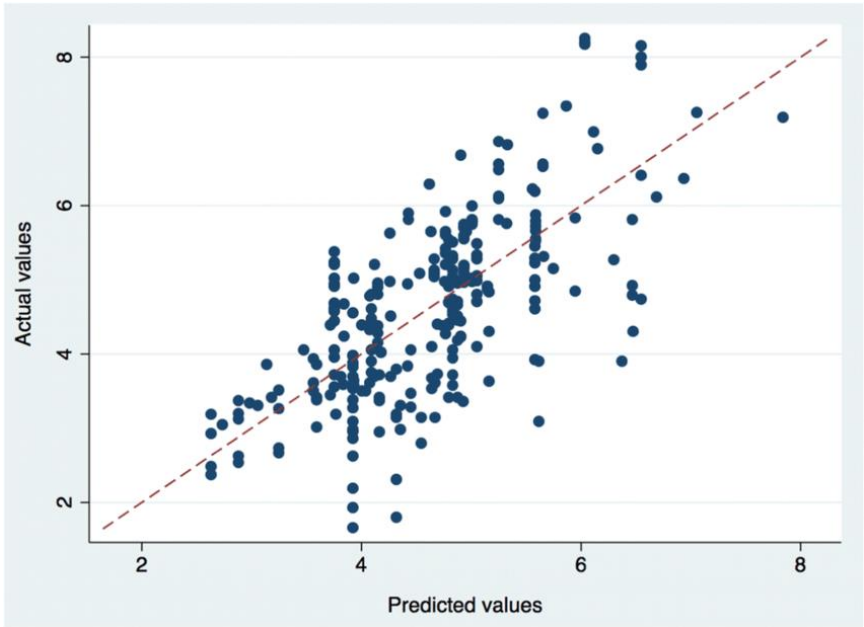
Percentage of total music sales by method



Credit: [learnenglish.britishcouncil.org](http://learnenglish.britishcouncil.org)

In a line graph, you can see the variation of a category over time so you can compare values for that category and find the range.

## 8) Scatter Plot



Credit: researchgate.net

You can see the general trends and lines of best fit.

## **Tips for Solving Problems:**

1. Make sure you understand each statistical model and know how to calculate the important features from each! This is really important, not only for Algebra 1, but also for higher math classes!
2. Most statistical models allow you to find the range, median, mean and mode. They do follow the same process, but it is unique to each type of graph, so make sure you know how to do these measures for the graphs that you can use to find them.
3. Make sure you also know how to solve problems like what category has the most values, least values and what is the difference between the categories with the most and least values type of problems. These are pretty simple, but it is important that you know how to understand the graph to do these problems.