

Spread:

- We need to know how spread out the data is, or the variability of the observations.

The Range:

- The difference between the largest and smallest observation (max – min).

Outliers:

- Observations that are so far above or below the majority of the data that they do not fit.

Mode:

- The most occurring number. You can have two modes (bimodal) but you cannot have 3 modes.

The Mean

The most common measure of center is the mean. The mean is the arithmetic average. On the distribution graph, the mean is the balancing point (center of gravity) of the graph. To find the mean of a set of observations you use the following formula →

Σ is the Greek capital letter sigma. In math it means “Add ‘em up”

\bar{x} Represents the sample mean. It is called “x bar”

The Median

The Median splits the graph into 2 equal halves (left area = right area). The number such that half the observations are smaller and the other half are larger. The median is the midpoint of a distribution. The Median splits the graph into 2 equal halves (left area = right area). The number such that half the observations are smaller and the other half are larger.

Steps:

1. Arrange the data from least to greatest.
2. Find the middle of the data.
 - a. If there are an odd number of observations, there will be 1 number at the middle. This is the median.
 - b. If there are an even number of observations, the median is the average of the two values that are in the middle of the lined up observations.

On Desmos – place the data in a new table [the examples below will assume the data is in x_1]

Mean - On an empty line, type $\text{mean}(x_1)$

Median – On an empty line, type $\text{median}(x_1)$

Range - Median – On an empty line, type $\text{max}(x_1) - \text{min}(x_1)$

Class Data:

	Hours of sleep	Backpack Weight
Data:		
Graphs	Create a Dotplot	Create a stemplot
Shape of the dotplots		
Center	Median: Mean:	Median: Mean:

Analysis: