M & M Activity- Measures of Central Tendency and Dispersion- Teacher

**Goal:** The goal of this activity is to allow students the ability to practice data collection and find measures of central tendency and dispersion. Wrap up questions will also allow for an insight into how each of these calculations are related to one another.

**Materials needed:** 12 small bags of M & M’s (they can be the fun size or regular packs), calculator and the M & M worksheet and answer sheet.

**Directions:** Separate the students into groups, it is not important the number of groups just as long as you collect the data from 12 packs of M & M’s. Have them record the number each color appears in their bag on the handout provided. Once this is done have the class work on tallying the “totals” columns in the rows and columns. Once the grand total matches the students can start working in their groups to calculate the Five Number Summary, range, mean, standard deviation, midrange, median and mode.

Each group will calculate each of these calculations for each color of M & M’s. Due to using 12 bags, the students will have 12 data points for each color.

I have the students write their final answers on the answer sheet I provide and then have them attach their work on the back.

I have attached an excel spreadsheet that will do the calculations for you. I have left in some data so that you can see where to enter it. All that you need to do is enter in the row of each color, one at a time. \*IMPORTANT\* You must sort the data first before the correct answers will appear. You sort the data by selecting the column 🡪 going to the data tab and hitting sort (smallest to largest).

Follow up questions for your students:

**1) What are your general observations about this activity?**

Most of my students observe that each bag of M & M’s have about the same amount in each. Some groups notice that they end up with a couple more or less. They also see that the color distributions are very different than what most would think.

**2) What do you notice about the measures of central tendency?**

The measures of central tendency are the mean, median, mode and midrange. As long as there are no outliers, the mean, median and midrange tend to be fairly close to each other. Again emphasize that this is what we see when discussing central tendency.

**3) What do you notice about your measures of dispersion?**

Dispersion is measured by range and standard deviation. These measurements when compared with each color tend to be fairly close to one another but can differ based on the colors in each bag.