**M&Ms Statistics**

**Today we are going to figure out the percentage of each M&M color that Mars puts in each package. First, select an “intact random sample.” Complete the attached chart using the data you and your classmates collect.**

Think about the terms below and explain how each relates to what we have just done:

Population:

Sample:

**Now, imagine that we want to do an experiment that tests the statement – “M&M’s melt in your mouth but not in your hand.”**

Write your hypothesis below:

What term(s) would you have to operationally define? Do that below:

What would be your independent variable?

What would be your dependent variable?

What confounding variables would you try to control for?

How would you use random selection to ensure your sample of M&M’s is representative of the population?

What other methods could I use to ensure that I have a REPRESENTATIVE SAMPLE?

What is random assignment? How could I use this to help limit confounding variables?

Explain the difference between random selection and random assignment:

What does it mean when we say that the results of a study are “statistically significant?”

What are reasons why results would NOT be statistically significant?

What does it mean when I say “p< 0.05”? How does this relate to statistical significance?

What does this exercise indicate about the importance of being purposeful when sampling a population? Why is it sometimes difficult to generalize the results of a study to the general population? Use the key terms you learned last week in your response.