

# Chapter 1 – 3 Review Lab: M&M’s

With the use of a statistical experiment involving M&M’s, the student will compile information and review the topics of frequency charts, histograms, and circle graphs, as well as explore the topics of mean, median, mode, variance, and standard deviation.

According to the M&M/Mars Division of Mars Inc. their packets of non-seasonal (regular; traditional) M&M colors are distributed as follows:

13%: Brown, Red

14%: Yellow

16%: Green

20%: Orange

24%: Blue

How accurate do you believe these numbers are?

Sort your packet of M&M’s into colors and record the frequencies in the table below.

Use the given tables below to collect your data as well as the class data.

Table 1 =>

	Blue	Brown	Green	Orange	Red	Yellow
Count						
Percent						

Class Data:

Table 2 =>

										Total	Mean	Median	Mode
Blue													
Brown													
Green													
Orange													
Red													
Yellow													
Totals													

Table 3 =>

	Blue	Brown	Green	Orange	Red	Yellow
Percent						

Complete the following table using your data and the class data.  $x_i$  represents your data while  $\bar{x}$  is from the class average. Keep in mind, all of this data is based on the sample of all possible M&Ms.

Table 4 =>

Color	$x_i$	$\bar{x}$	$\bar{x} - x_i$	$(\bar{x} - x_i)^2$	Std. Dev.
Blue					
Brown					
Green					
Orange					
Red					
Yellow					

The following items must be included in your lab report.

**Data Section**

- Table's 1, 2, 3, and 4 must be in the data section of your report

**Conclusion/Discussion Section**

- Include the following types of graphs
  - A histogram of your M&M color frequency and the classes M&M color frequency (a double bar graph in Excel)
  - A circle graph of your color percentages
  - A circle graph of the classes color percentages
- You must include a brief description of each of the above graphs along with the graphs themselves.
- Answer the following questions in the Conclusion/Discussion section as part of your lab report.
  - 1) Does your bag of M&M's fit the standard that Mars Inc. has set for the distribution of M&M colors?
  - 2) Does the class data of M&M's fit the standard that Mars Inc. Has set for the distribution of M&M colors?
  - 3) In this case, what does the standard deviation tell us with respect to why your individual colors are different?