Name _____ Date _____
Elementary Statistics Period _____

Chapter 3 Project: Statistics with M&M's

Due at the start of class on Wednesday, November 17, 2021

What color M&M candy is most common? How many blue M&M's can you expect to get in a bag of M&M's? What color do your classmates prefer? Do you always get the same number of candies in a bag? On average, how many candies can you expect? In this activity, you will find the answer to these questions as well as many others.

1. Begin by *predicting* some of the answers to the following… (4 pts)

   - Most common color _____
   - Number of blue M&M's per bag _____
   - Number of candies per bag _____
   - Your favorite color M&M is _____

2. ***BEFORE YOU EAT THE M&M's***, count the number of candy pieces & the number of each color. Record your results on the chart below in order to create a frequency distribution. (3 pts)

M&M Color	**Frequency**
Red	
Orange	
Yellow	
Green	
Blue	
Brown	

3. Complete the dotplot on the next page. Let one circle equal one M&M. Starting at the bottom, fill in one circle for each M&M of that color. For example, if you have 3 red M&M's, you will shade in three circles in the red column. (3 pts)

20	O	O	O	O	O	O
19	O	O	O	O	O	O
18	O	O	O	O	O	O
17	O	O	O	O	O	O
16	O	O	O	O	O	O
15	O	O	O	O	O	O
14	O	O	O	O	O	O
13	O	O	O	O	O	O
12	O	O	O	O	O	O
11	O	O	O	O	O	O
10	O	O	O	O	O	O
9	O	O	O	O	O	O
8	O	O	O	O	O	O
7	O	O	O	O	O	O
6	O	O	O	O	O	O
5	O	O	O	O	O	O
4	O	O	O	O	O	O
3	O	O	O	O	O	O
2	O	O	O	O	O	O
1	O	O	O	O	O	O
	red	orange	yellow	green	blue	brown

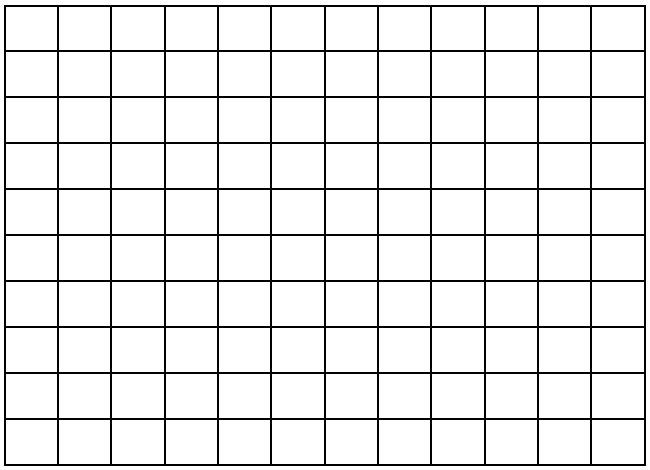
4. Collect the following data <u>from your classmates</u>:

   a. Total Number of M&M's per bag: (2 pts)

5. Answer the following questions based on the data you collected for the <u>*number of M&M's per bag*</u>. If necessary, round your final answers to the <u>tenths place</u>. (3 pts each)

   a. Construct a frequency table (with at least 5 classes) for the number of M&M's per bag.

b. Construct a histogram for the number of M&M's per bag.



c. What is the mean number of M&M's per bag? _____

d. What is the median number of M&M's per bag? _____

e. What is the mode number of M&M's per bag? _____

f. What is the midrange for the number of M&M's per bag? _____

g. What is the range for the number of M&M's per bag? _____

h. Calculate the standard deviation & variance for the number of M&M's per bag.

s = _____

s^2 = _____

i. What is the coefficient of variation for the number of M&M's in each bag?

CV = _____

j. What is the minimum and maximum "usual" numbers of M&M's in each bag?

minimum usual value = _____

maximum usual value = _____

k. What number of M&M's is at the 30^{th} percentile?

P_{30} = _____

l. If your brother bought a bag of M&M's that contained 34 M&M's, what would the z-score be?

z = _____