



Activity 6.4C – Introduction to Statistics

Purpose

To be able to describe a set of numbers and then make accurate inferences (a.k.a. educated guesses) about that group of data based on incomplete information

Materials

Bag of M&Ms

Excel®

Volume measuring device (Graduated cylinder or equivalent)

Procedure

1. Make a prediction on how many M&Ms are in your bag _____
2. Open the bag and count the M&Ms
Record the actual number _____
3. What was the difference in the number you guessed vs. the actual number?
4. Place the M&Ms in the measuring device. What volume does the entire pack fill?
_____ml
5. Divide the M&Ms into sets by color.
6. Open Excel and create the spread sheet shown here.

	A	B	C	D	E	F	G	H	
1				Candy Lab					
2	Yellow	Red	Blue	Brown	Green	Orange	Total	Volume	
3	5	7	8	25	7	5	57	87	

7. Enter your data in the appropriate spaces.
8. Obtain data from other groups and record them on additional lines.
9. Write a formula to sum each column.

10. For each color create a statistical profile to include the mean, median, mode, and standard deviation for each color.

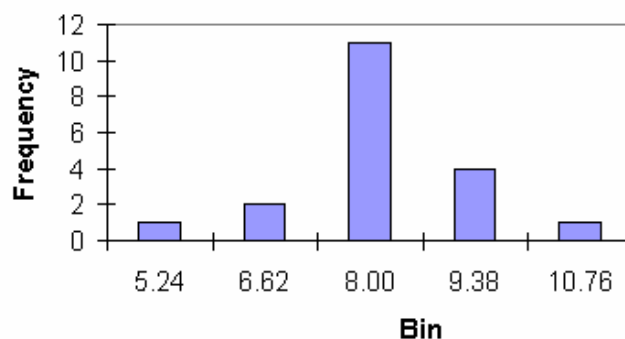
24						
25	Color	Total	Mean (Ave)	Median	Mode	St. Dev.
26	Yellow	116	6.1052632	6	6	1.100239
27	Red	145	7.6315789	8	8	1.382852
28	Blue	103	5.4210526	5	4	1.538968
29	Brown	492	25.894737	26	27	2.492093
30	Green	106	5.5789474	6	4	1.261207
31	Orange	103	5.4210526	6	6	1.121298
32	All	1065	56.052632	57	57	4.377641

11. Enter formulas in the cells to extract the necessary information.

12. Using the data from the class totals create a histogram for a color of your choice. The first step is to create a bin range set using the median number in the middle and go two standard deviations in either direction. The example here is for the red color

Bin Table	
	5.24
	6.62
	8
	9.38
	10.76

Histogram



13. Is your histogram skewed? If so explain which way and why.

Conclusion

1. Which color is most likely to have the same number in each bag? Explain your answer.
2. Does your histogram fit a classic bell curve? Why or why not?
3. Using the information you developed in the lab above combined with any other you think you might need, calculate the number of M&Ms it would take to fill your lab. Explain your answer mathematically.
4. How much would the M&Ms from question 3 weigh?