“The Great M&M Experiment”

Welcome to AP Stats! Throughout the course of history, mathematics has been called upon to answer some of the world’s most pressing questions, including, but not limited to:

What percentage of milk chocolate m&m’s are blue? Write your guess here: ____%. How confident are you?

Your goal is to answer the question above using only a “sample” of m&m candies. You must justify your conclusion by organizing, plotting, and referencing data collected by the entire class.

1. **Your first task is to collect data on the m&m color distribution through a carefully designed and controlled experiment in which you will:**
    - Open a bag
    - Count the number of each color m&m and list in the following table:

Yellow____ Blue____ Brown____ Red____ Green____ Orange____

Total number of m&m’s in your bag _____

- Properly dispose of the m&m’s by seeing whether or not they really do melt in your mouth, not in your hand.

2. **Calculate the percentage of blue m&m’s in your sample: _____**
3. **Record the class data of the percentage of blue in each of the samples from each student in the class and write those percentages in the chart below:**

4. **Now organize the class data in a meaningful way (pleasing to the eyes)? Show that below:**

5. **Can you summarize the class data using a basic numeric measure? Explain and then write your answer: _____**

6. **Display the class data using a dotplot:**

4% 8% 12% 16% 20% 24% 28% 32% 36% 40% 44% 48% 52%

7. **Analyze the data**

   - Describe some general features of the data

   - What would you consider the "typical" percentage of blue m&m's? Explain.

   - Does our data reveal the true percentage of blue m&m's? If so, what is that true percentage? If not, what DOES it reveal about the true percentage?

8. **Conclusion: How confident are you in conclusion from your answer to the last question above? Why?**