Scientific Method: M&M Lab

INTRODUCTION

In this activity, you will follow the steps of the scientific method to discover how many candies of each color are in one bag of M&Ms.

MATERIALS

1 "fun-size" bag of M&Ms Colored pencils to match M&M colors

1. State the problem: (What are you trying to find out?)

2. Which color do you think is most common? ______

3. Form a hypothesis. Write a statement that tells how many candies you think will be in the bag and how many there will be of each color.

DIRECTIONS

- 1. Open the bag of candies. *No eating yet!* Sort the candies by color.
- 2. Count the number of each color.
- 3. Write the colors of the candies in the first column of the data table.
- 4. Count how many candies there are per color. Record the results in the frequency column of the table.
- 5. Record your results in the whole class data table.
- 5. Write the total number of candies on the bottom of the frequency column where it says "Total".
- 6. Determine the percentage that each candy color is of the entire bag, and record it in the percentage column of the table.
- 7. Record the class data and calculate frequency.

Percentage = # of candies of one color X 100 total # of candies in the bag

Your DATA

Color	Frequency	Percentage
	Total:	100%

CLASS DATA

Color	Frequency	Percentage
	Total:	100%

8. Use the class data that you entered to make a bar graph. Graph Color on the x axis and total on the y axis.

9. Form a conclusion. Write a paragraph that answers the problem you looked to solve in the M&M lab. Your paragraph should include:

- a. An answer to the question addressed in #1. (State the problem: What are you trying to find out?)
- b. The total number of candies in your bag and how many there were of each color (frequency).
- c. How your actual results compare with your hypothesis?
- d. How do your results compare to the whole class data? Give reasons for similarities and differences.

QUESTIONS

1. What is an inference?

2. What is the independent variable? Dependent variable?

3. List 2 constants in this experiment.

4. If I had a large bag of peanut M&Ms, what do you believe to be true about the frequency of the colors in that bag? Why do you believe this?

5. Would you be more accurate in predicting percentage/frequency of the colors of M&Ms in a bag, a large bag of M&Ms or a fun size of M&Ms. Explain your answer.