Name _____ Date _____ Period _____

The Scientific Method: A Study of Candy
Skittles OPTION

Directions: Please fill in the answers below as you go through your study of candy.

Problem: How accurate is the Skittles machinery in making each package of Skittles exactly the same in terms of mass, total amount, and amount of each color?

Research: Please read below. This information is from the official Skittles website and from talking to an official Skittles representative.

- The amount of Skittles per 61.5g package is 65.
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There are red, orange, yellow, purple, and green Skittles in a package.

The batch of Skittles used to make millions of bags of them has 20% of each color. There is no specific percentage, though, of the amount of each color in each bag.

Hypothesis: Remember to look back at the problem! There should be THREE PARTS TO THIS. EXPLAIN YOUR ANSWER (It's not "If, Then" today.)

My hypothesis is that the fun size bag of skittles will contain ___ g of skittles. The bag will contain ___ skittles total and _ red, _ yellow, _ green, _ purple and _ orange.

Procedure: PART 1: MASS

DO NOT open your Skittles yet!

1. Wash your hands before beginning the activity.

2. Assign each person's candy package a number (1-5).
3. Find the mass of each package of UNOPENED CANDY using the single pan balance on your table.
4. Please look at the Data Collection and Analysis section and write down your group's data on Data Table 1.

PART 2: TOTAL AMOUNT

1. Open your package of Skittles.
2. Count the total amount of Skittles in YOUR package.
3. Go to the Data Collection and Analysis section and write down your group's data on Data Table 2. (HINT: Make sure you use the same package as package 1, etc.!)

PART 3: COLOR AMOUNTS

1. Sort your Skittles into groups of their different colors.
2. Count the number of each color from YOUR package of Skittles.
3. Go to the Data Collection and Analysis section and write down your group's data on Data Table 3.

Data Collection andAnalysis:

Data Table 1: Masses of Each Person's Package of Skittles

Package #	1	2	3	4	5
Actual Mass of Package (g)					

Mass on the front of the package: _____g

Average Actual Mass for your group: _____

To figure this out, find the average amount for the color number by the . Then divide that number by the total number of Skittles for your group". Move the decimal two places to the right and you have your percent to the nearest WHOLE Number! Average Total number of Skittles for your group: _____

Data Table 2: Total Amounts of Skittles in Each Person's Package

Package #	1	2	3	4	5
Total number of Skittles					

Total per package as stated by Skittles company: _____

Data Table 3: Color Amounts in Each Person's Skittles Package

Package #	1	2	3	4	5	Average Amount of Each Color	Percent of Each Color (Out of Avg. Total)
Total number of Red Pieces							

Total number of Yellow Pieces							
Total number of Orange Pieces							
Total number of Green Pieces							
Total number of Purple Pieces							

Look at the data tables above and answer the following questions: USE COMPLETE SENTENCES! (By the way—you should usually graph information from your data tables before analyzing! We're going to try graphing on the computers later. Go ahead and answer the questions.)

1. Did the mass on the package match the actual mass for every group member?

   What was the lowest mass? What was the highest mass?

2. Were there 65 total Skittles in each package?

   What was the smallest number? What was the largest number?

3. How did your group's percents for each total color match up to what you found in your research? (Be sure to explain each color and how well they match up to the research on the first page!)

4. Which would be better to make a conclusion with, your single candy package's data or your whole group's data? Why?

OVER ⟶

5. Why is it important to keep honest, clear, and accurate records (data) during an experiment such as this?

6. This lab is actually like three experiments combined into one. Can you figure out what the independent variable is in each of the three parts? (HINT: All parts have the same independent variable.)

   What is the dependent variable in each of the three parts? (HINT: All parts have a different dependent variable.)

Conclusion: What can you conclude after this experiment? (I'm looking for a GOOD paragraph here!)