

5- Scientific Method Candy Lab

Do candy makers put equal amounts of each color in each bag? The candy companies recognize that there will be some error from bag to bag, but their stand is that overall, there are equal amounts of each color being distributed. Your task is to prove with cold, hard evidence if the companies are telling the truth. You will need to carry out a set procedure so that we will have comparable results.

This means that you must follow the scientific method. The **scientific method** is a way to think about problems and a way to solve them. Scientists do not always follow the steps of the scientific method in order. However, after a problem is solved, a scientist can use the scientific method to explain how the solution was reached.

The **scientific method** can be broken down into the following parts:

1. Make an observation. State the **problem** or **question** to be solved.
2. **Research** (Gather information on the topic) and form a **hypothesis**.
3. Make a **prediction** of expected results.
4. **Experiment!**
5. Record and analyze **data**.
6. State a **conclusion** and **communicate** the results.

1. **Problem:** (What are you trying to figure out?)

2. **Observation/Research:** (It is unlikely that you will find any information about colored candies in the library. Most likely, your best sources of information are experts, people who have experience with colored candies. Look around, and you will find some experts. In fact, you may be an expert yourself!)

3. **Hypothesis:** (Write a statement that tells how many there will be of each color in a bag of Skittles.)

4. **Experiment** - List the steps you will take in this experiment (use additional paper if needed)

A.

B.

C.

5. **Materials** – create a list of materials that you will use for this lab (use additional paper if needed)

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6. Record and Analyze the Data (for your bag of candies):

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

Candy Color	Frequency (Amount)	Percentage %
Total Amount in Bag		100%

7. **Create a bar graph** on the next page to show your results.

- Label your x-axis “Candy Color” and the y-axis “Amount of Candy Pieces.”
- Color the bars the same colors as the skittles.
- Give your bar graph an appropriate, descriptive title

Title: _____

[illegible]

8. **Conclusion:** (On the lines below, form a **paragraph** that answers the problem you looked to solve in the Skittles lab.) Your paragraph should include:

- An answer to the problem.
- How many there were of each color (frequency)?
- How your actual results compare with your hypothesis (Was your hypothesis correct? If not, how close were you?)
- How could the experiment be adjusted to increase validity of the results?

[illegible]