

M&M Lab

**Pre-Lab Questions**

Answer the following questions, in complete sentences, prior to participating in the lab activity:

1. What type of observation will we be using to solve the activity’s problem?

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1. What will you consult to gather information on the lab activity?

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1. What tools will you use to record and organize your data?

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1. Read over the steps of the lab. Are there any safety concerns?

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1. At what point will eating the M&M’s be permitted?

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**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. It will show you how scientists record data on charts, make graphs, and draw conclusions. After you have completed steps 1-3, show your teacher to get a bag of M&Ms to complete the rest of the steps. Do not eat any of the candies until you are permitted, because it will affect your results.

**OBJECTIVES**

1. Name and describe the steps of the scientific method.
2. Follow the steps of the scientific method to solve a problem.
3. Record data in a table or chart.
4. Construct a graph that shows the results of the investigation.

**MATERIALS**

1 bag of M&MS

Cored pencils or crayons to match M&M colors

Pencil or Pen

**DIRECTIONS**

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

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1. **Gather information:**

What colors of candies are found in these bags? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Which color do you think is most common? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Form a hypothesis**:

Independent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hypothesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Experiment!** List the steps in your procedure.
2. **Collect and analyze data:**
   1. Create a data table to record the colors of the candies. You must include the color, the frequency (how many) and the percentage of that color.
   2. Use the data you collected to make a bar graph below. (Be sure to label all the correct parts of your graph.)

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1. Conclusion:

On the lines below, form a paragraph that answers the problem you looked to solve in the M&M lab. Your paragraph should include:

* 1. An answer to the question.
  2. The data you collected.
  3. How the actual results compare to your hypothesis (do you accept or reject your hypothesis?)
  4. Is there anything that could have affected your results?

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