

Name: _____

Period: ____ Subject: _____

Date: _____

Percent Composition Lucky Charms Lab

Objectives:

- to practice finding percent composition by mass and percent error (percent variation)

Materials:

- triple-beam or electronic balance
- disposable cups
- 2 types of cereal

Methods:

1. Obtain three samples each of two different brands of cereal.
2. Carefully find the mass of the cereal mixture (cereal and marshmallows) in each of your samples and record your values.
3. Separate out the marshmallows and record the mass of just the marshmallows from each sample.
4. Cereal should be disposed of in the trash.

Data:

Brand & Sample #	Mass (g) (cereal mixture)	Mass (g) (marshmallows)	% Composition by mass (marshmallows)	% Error
average				
average				

Discussion:

1. Would you classify these cereal samples as mixtures or pure substances? If mixtures, would you classify the samples as heterogeneous mixtures or homogeneous mixtures? If pure substances, would you classify the samples as compounds or elements? Explain the reasons for your choice.
2. In the lab above, you measured three samples of each cereal. Why not just measure a single sample of each cereal?
3. Use the average % composition by mass of the marshmallows as the “correct” amount. Calculate the % error for each sample by comparing it to the average for the three samples.
3. Discuss some of the possible sources of error in this lab? (be specific)
4. What changes could you make to eliminate some of these potential sources of error?
5. The name brand cereal cost \$ for ounces. The generic cereal cost \$ for ounces. Which cereal was more expensive (per ounce), the name brand or the generic version? Which cereal gave you a higher % composition by mass of marshmallow treats?

Conclusion:

Did the cereal that you predicted have the highest percent composition by mass of marshmallow treats? Considering the cost per ounce of the two cereals and how many “charms” you get in each, which is a better value? Explain the reasons for your statement.