G10 Science

Calorimetry Lab Writeup

Today you will complete the Criterion B portion of the lab. Using the information you gathered in yesterday’s trial run, you will complete the following (as a group):

**Research Question:** Devise a good researchable question about food calorimetry—meaning come up with a question that you can answer with this lab.

**Background:** Define “calorimetry,” describe what it’s used for, and discuss the potential energy content in snack foods. Explain how to calculate energy content in a lab setting. You need to include the specific heat equation and don’t forget to describe each quantity, including units.

**Hypothesis:** Predict something about the relationship between food (mass, type, ~~fat content~~, etc) and energy content. Make sure your hypothesis can actually be tested.

**Independent Variable:** Probably (?) the mass of food. You’re dealing with quantitative measurements, but you should also compare food types: nuts, chips, cookies, candies, etc.

**Dependent Variable:** The DV should relate the water temperature change to the amount of energy contained in the food.

**Controls:** What factors did you control for? Examples: amount of water used, distance food is from the bottom of the soda can, mass of food, etc.

**Materials:** Bullet list of materials, and glassware should have volumes listed.

**Procedure:** A ***step-by-step*** procedure

**Safety Precautions:** List at least 4 safety precautions.

**Criterion C (to be done next week)**

**Data:** You should have (in order) qualitative observations and then quantitative data in the form of tables that include average data. Sample calculations need to be included, and there needs to be a final data table that compares the energy content between the four foods. Make sure your tables are labeled.

Try to come up with an appropriate graph(s). Is it possible to include all the foods in one graph?

**Analysis:** What trends and patterns do you notice?

**Conclusion:** Restate the RQ and hypothesis and answer both, using data to support your answers. Summarize your experiment. What did you learn about food calorimetry?

**Evaluation:** Evaluate your procedure. Was it a valid method to determine the energy content in food? Was your data reliable? What worked? What didn’t work? How would you improve this lab? What kind of extensions would you include in future experimentation?