"I-4: Now We're Cookin'" Lab Report Instructions

This is a formal lab report so be sure you have the following sections in your write-up:

I. Title

II. Purpose (In your own words or you will get NO CREDIT!). Include the definition of "calorimetry" in your purpose.

III. Materials

IV. Procedure (You may copy and paste the procedure steps from the Pre-Lab instructions)

V. Observations

- Draw a diagram of your calorimetry experiment.
- Draw arrows showing which direction heat is being transferred into or out of the water and into or out of the Cheeto.
- What is heating the water in the soda can?
- Is heat required or released by the Cheeto? Explain your reasoning?
- Heat is required to raise the temperature of the water, but the burning Cheeto feels hot. How can that be? Explain your reasoning.

VI. Data

- Both Data Tables from the I-4 activity
  (Note: You will be graded on keeping track of significant figures. So check your data tables to make sure you did this.)
- As the mass of Cheeto increases, how should the change in temperature change? Is this consistent with your lab data?
- As the mass of water increases, how should the change in temperature change? Is this consistent with your lab data?
- Error Analysis: Explain any experimental errors that could have negatively affected your data.

VII. Calculations

Answer the following questions about the Cheeto burning experiment. You will need the data you collected as well as the data and calculations from the other 3 teams to determine the number of calories of heat transferred per gram of Cheeto.(Show your calculations for "Calories transferred to water" and "Calories per gram of Cheeto" below the data table.)

1. Fill in the following data table:

	Grams of water	ΔT	Calories transferred to water	Mass of Cheeto burned	Calories per gram of Cheeto (cal/g)
A Half Cheeto + 100 mL H_2O					
B Half Cheeto + 200 mL H_2O					
C Whole Cheeto + 100 mL H_2O					
D Whole Cheeto + 200 mL H_2O					

2. How does the data depend on the mass of the Cheeto?
3. How does the data depend on the mass of the water?
4. In this experiment, are Cheetos considered "fuel"? Explain.

VIII. Conclusion

Do these following calculations for C only:

1. How many calories are released per Cheeto?
2. How many calories are released per gram of Cheeto?
3. How many food Calories are released per Cheeto?
4. According to the Nutrition Facts given for a Cheeto (160 Calories for a serving size of 9 Cheetos), how many food Calories should be released per Cheeto?
5. Calculate your Percent Error:
   % error = absolute value of (experimental value – true value)/true value x 100