

2. EVENT PARAMETERS:

a. Each team may bring writing utensils, non-camera calculators, 5 pages of notes (both sides) containing information in any form from any source (sheet protectors are permitted), a student made calorimeter with a non-mercury thermometer and 1 page of test log data. The data in the log is limited to the following and must be completed prior to the competition for the specified food article (See Competition: Part 2 for more details).

	Initial Temperature of Water (Celsius)	Final Temperature of Water (Celsius)	Change in Temperature of Water (Celsius)	Mass of water (grams)	Mass of food (grams)
Trial 1					
Trial 2					
Trial 3					

Students may also bring:

- i. Test tubes, brushes & racks, spot plates, well plates, reaction plates, beakers or similar small containers for mixing
- ii. Something for scooping & stirring
- iii. pH or Hydrion paper
- iv. Hand lens(es)
- v. Beral pipettes
- vi. 9-Volt Conductivity tester
- vii. Paper towels

Note: Students not bringing these items will be at a disadvantage. The supervisor will not provide them.

b. The event supervisor will provide foodstuff, a source of water and balances/equipment/materials to do laboratory activities.

c. Safety Requirements: Students must wear goggles, an apron or a lab coat and have skin covered from the neck down to the wrist and toes (gloves are optional,

but if a host requires a specific type they must notify teams). Long hair, shoulder length or longer, must be tied back. Students who unsafely remove their safety clothing/goggles or are observed handling any of the material or equipment in an unsafe manner will be penalized or disqualified from the event.

3. THE COMPETITION: The competition will be conducted in two parts.

a. Part 1: This part of the test will include both experimental tasks and multiple-choice or other questions about the chemistry of food and food grains (any seed). Students will be expected to perform laboratory tasks including identifying carbohydrates, lipids, and proteins in foods. Students should be able to measure mass, volume, temperature and pH as well as perform simple chemical/physical tests such as density, moisture content, and percent composition. Detection tests for proteins, lipids and various carbohydrates may be performed using appropriate methods such as Biurets test, Benedicts test, iodine reagent test, and lipid presence tests using brown paper. Questions and activities may also cover topics such as leavening agents, food additives, GMO, gluten and gluten free foods, and caloric value.

b. Part 2: Students will bring a nonelectric calorimeter and analyze test log data measured prior to the tournament of a 1-20 gram cheese puff. Based on its popularity and accessibility, your data should be based on Cheetos Puffs. A picture of the item is shown below. This data will be used to calculate the calories per gram of foodstuff. Judges will consider the student made calorimeter as a part of the final Part 2 score. The calorimeter should fit in a 30 cm X 30 cm X 30 cm box. Calorimeters over this size will be penalized 10% of your part 2 score. See the Event Parameters for details required for the one-page test log notes.

