Energy of a peanut

In this experiment, we will use a Calorimetry technique to determine the heat of combustion of a peanut and a marshmallow. Using a simpler version of a calorimeter, we will burn a peanut. First we measure the peanut, and after burning we will measure the waste product left after the burning of the peanut. We will measure the volume of water that melted due to the heat generated by the peanut and the marshmallow. This experiment will show us how many calories are actually in the foods we eat as opposed to the amount of calories listed on the label. Intro:

Using a simpler version of the calorimeter, we will try to determine the amount of calories in a peanut and a marshmallow. The peanut will create more energy that the marshmallow because of the fat content of the peanut as opposed to the marshmallow. We will measure it in calories which is the heat required to raise 1 gram of pure water 1 degree C. There is a “ calories per gram” on the label of each item and we are also testing to see if those are true. The calories per gram for the marshmallow are 3. 2 cal/g. the calories per gram for the peanut are 6 cal/g.

Materials and Methods: The materials needed for the experiment are peanuts, marshmallows, a beaker with ice, wire to hold marshmallow and peanut, lighter, graduated cylinder, and a metal stand. First we will set up a simple calorimeter. We will hold a beaker with a metal stand over the peanut that is to be burned. We will put ice in the beaker to keep the beaker from absorbing the heat produced by the peanut or marshmallow. This way we can get a more accurate measurement of the heat released by the peanut. We will then take a peanut and weigh it.

This is so we know the mass before and after and are able to determine the amount of the peanut that was burned. We will then light the peanut and put the beaker of ice over the burning peanut. Once the peanut is completely burned, then we will weigh the remained charcoal. Initial mass-remaining mass= mass that was burned. Then we will take the beaker and pour out the water into a graduated cylinder to get the volume of the water. We will do this 3 more times with a peanut and the steps will be repeated 4 times with a marshmallow.