

## ICE-CREAM LAB!

**Purpose:** The purpose of this experiment is to understand how much thermal energy is transferred from hot to cold substances.

**Hypothesis:** The hypothesis is that if smaller masses of ice-cream are compared, the thermal energy transferred will be less than the larger masses of ice-cream.

**Background:** Calorimetry is measuring the amount of heat given out or taken in during a process such as combustion or change of state. The measurements are often made by observing the amount of solid liquefied, or liquid vaporized, under set conditions. The Thermal energy transferred =  $4.18\text{J}/(\text{g})(\text{K}) \times \text{Mass (g) of cold water} \times \text{Temperature change of cold water}$ .

**Important Observations:** An Important Observation was that the hypothesis was correct. It was correct because the smaller the substance ~~you have~~, the amount of Thermal energy being transferred will be less ~~Thermal energy~~, and ~~if you have~~ <sup>with</sup> more of the substance, ~~you will have~~ <sup>there will be</sup> more Thermal energy. So, this proves that the hypothesis is correct.

Some other Important Observations was that after the ice melted the heat that was taken away from the cream, made the cream freeze. But, the heat transferred back into the cream once Team 4 wanted to make the ice-cream harder. This makes the heat and energy transfer back into the cream because the ice was already melted. The ice can't take anymore heat in because the ice is already melted.

Another Important Observation was that the groups were mostly the same because they all had the same Specific Heat, 4.18, and they all were close to the same temperature, 15 at the beginning and 0 at the end. But, they were different in ~~some ways because~~ <sup>that</sup> the masses were different.