

Drew Casner  
*Staying Cool*

The purpose of my experiment is to find out which is the best insulator to keep water cold. The types of insulation I tested were denim strips, cardboard strips, human hair, Styrofoam chunks, and fiberglass. The way I tested each insulator was by building an inner and outer module. The inner module held water at 40.0 degrees Fahrenheit. The outer module was filled with the five types of different insulation. I used a Vernier Go Probe to record the temperature every second for five hours. I used the Logger Lite software to graph the data taken by the Go Probe. I ran three tests on each experiment and found out that the human hair was the best at keeping the water cold. The human hair tests came out with a mean temperature change of 7.7 degrees Fahrenheit. The next best insulators were fiberglass, denim, cardboard, and Styrofoam in that order. I ran three control group tests with no insulation that resulted in a mean temperature increase of 16.4 degrees Fahrenheit. The fiberglass came out with a mean temperature increase of 8.2 degrees Fahrenheit, denim increased by 9.8 degrees Fahrenheit, the cardboard strips increased by 10.1 degrees Fahrenheit, and the Styrofoam increased by 11.5 degrees Fahrenheit. Overall the human hair did the best keeping the water cool for five hours. It beat modern day fiberglass insulation by 0.5 degrees Fahrenheit. This is good because the human hair is a better insulator and may spark new types of insulation made from natural materials.