



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Katherine E. Hogan	Project Number J1208
Project Title Does Organic or Man-made Material Insulate Better?	
Abstract Objectives/Goals My objective was to determine if a natural insulator or a man-made material would insulate better. After researching, I hypothesized that one of my man-made materials would work the best. However, out of naturally occurring materials, I believed straw would work the best. Methods/Materials I first constructed a box that I used to complete my experiment in. Next, I filled the box with the insulation. Then I used a light bulb to heat the inside of the box up to 50 °C. After that, I let the box sit and cool for 15 minutes and then recorded the ending temperature. I performed five trials for each type of insulator and then calculated the average remaining temperature. Results My results showed that fiberglass worked the best overall and that straw worked almost as well and was the best of the natural insulators. On average the dirt had a remaining temperature of 24.56°C, the straw turned out to be 30.66 °C, the cellulose turned out with 26.00 °C, the leaves ended up being 27.68 °C, the Styrofoam trials came out to be 31.18 °C and the fiberglass trials came out to be 31.34 °C. Conclusions/Discussion These results supported my hypothesis, because I had hypothesized that one of the man-made materials would insulate the best, however straw would also have a high ending result. I was excited to find how close straw's results were to fiberglass's results as it supports the idea that we can use natural materials that are much better for the environment in the building process.	
Summary Statement My project was designed to test and compare the effectiveness of natural and man-made insulating materials.	
Help Received My father helped me gather all of the materials and helped me build the box and get started on the testing.	