



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Tyler Q. Moon	Project Number J1123
Project Title Which Insulation Material Is Better for Homes and Buildings?	
Abstract Objectives/Goals The objective of my project is to determine whether there are materials that can be more energy efficient when used as an insulation material for homes and buildings. I hypothesized that the fiberglass material would keep heat in the structure the longest. Methods/Materials Four structures, of the same size and shape, were constructed from foam board. Three structures were filled with an insulation material that was either R-11 fiberglass, recycled bubble wrap or recycled foam peanut shells. A fourth structure was left empty. A 100 watt light bulb provided the heat source that was applied to each model structure for 5 minutes. The change in temperature was recorded every 2 minutes to see how long it would take to cool down to its original temperature. Results Several trials were performed and the time, measured in minutes, it took for each structure to cool down to its original temperature was recorded. The bubble wrap took on average 98.0 minutes; the R-11 fiberglass 104.4 minutes, the foam peanut shells 100.8 minutes and the model with no insulation averaged 66.2 minutes. The results indicate all the materials tested could possibly be used as an alternative insulation material. Conclusions/Discussion The project results indicate that the R-11 fiberglass material kept the heat in the model structure the longest and was the best insulator of the materials tested. Therefore, it supported my hypothesis. The data also confirms that use of any type of insulation is better than none at all. In addition, common household materials could serve as potential alternative insulation materials.	
Summary Statement This project tested different materials to determine whether they can be more energy efficient when used as insulation materials for homes and buildings.	
Help Received My dad helped with cutting the foam boards and assembling the light sockets. My mom helped proof read documents. My science teacher provided guidance and support.	