



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Kelli L. DeBellis	Project Number J1509
Project Title Going Up: A Study of Rising Heat through Flooring Materials	
Objectives/Goals To determine what types of flooring on a second story house would allow heat to transfer quickly and be maintained to keep overall heating costs down. I believed that the Red Pile Carpet with rebond padding would allow the least amount of heat to transfer to the second floor and the Linoleum sample would allow the most heat to transfer.	
Abstract Methods/Materials Drilled hole in the lid of each box. Put four small foam pads inside of the box to act as a shelf. Cut the flooring samples to fit in the box. Boiled water to 172 degrees Fahrenheit. Constantly measured water for temperature consistency Poured water to 1# level in box. Immediately inserted flooring material and closed lid. Inserted the thermometer, then took initial temperature reading. Recorded temperature readings at intervals of 5 and 15 minutes Plastic Box with lid, Thermometer, Timer, Red Pile Carpet, White Compact Carpet Red Pile Carpet with rebond padding, White Compact Carpet with rebond padding Linoleum, Wood Flooring, Control (Box with no flooring material)	
Results Heat transfer results at the 15 minute interval: Red Pile carpet allowed an average of 15 degrees, White Compact Carpet allowed an average of 16 degrees. With rebond padding the Red Pile carpet allowed an average of 11 degrees and the White compact carpet allowed an average of 13 degrees. Linoleum allowed an average of 22 degrees. Wood allowed an average of 25 degrees. The Control allowed an average of 39 degrees.	
Conclusions/Discussion My hypothesis was not completely accurate. The Red Pile carpet with padding did allow the least amount of heat to the top story. The wood flooring not the linoleum allowed the most heat transference. I expected the wood flooring material would not allow the heat through because the material is significantly thicker than the linoleum. I had not considered that the wood was porous and the linoleum was not. I was also surprised to discover the carpet rebond padding only changed the results by a few degrees. My research indicated that carpet padding was much more effective than my project showed. It is possible carpet company advertisements overstate the effectiveness of carpet padding.	
Summary Statement My project is about the process of heat transference through common flooring materials.	
Help Received Mom helped boil water and purchase materials; Grandfather drilled holes in box lids; Father cut wood flooring material; High School loaned thermometer; Mom submitted online application.	