



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Allison Hartsell	Project Number 36248
Project Title Heat Retention Levels of Woods	
Abstract Objectives/Goals The objective of my experiment was to understand what type of wood would be best for a home in a cold region. I tested which wood had the best heat retention to see which wood would keep a house warm the longest. I predicted that a hardwood would have the best heat retention due to its density. Methods/Materials My procedure for this experiment is simple: I heated my woods at the same time at 250°F for 20 minutes, Next I placed each one in a individual jar with a thermometer, Then for an hour I checked the temperature every 5 minutes and recorded my data. My 6 woods were: birch, maple, poplar, oak, cedar, and pine. Results After my experiment I found that pine, a softwood, was the best heat retainer. That proves the opposite of my hypothesis. Hardwoods were poor at heat retention because their density prevented the heat from fully absorbing. Therefore, the heat was released faster. However, I realized that my other softwood, cedar, was the WORST heat retainer. I discovered that this was because cedar was very porous so heat was released faster. Conclusions/Discussion I learned what types of woods would be best for houses in cold regions to keep heat in better. I also learned that the worst heat retainer would be best for decks to prevent the deck from over-heating and being too hot under foot. From the six woods I tested the best wood for houses would be pine.	
Summary Statement I tested the heat retention of six types of wood in order to see which one would retain heat the best and therefore be a good home construction material.	
Help Received Susan Wright (science teacher helped with layout of board) Carl Gong (retired teacher, helped with how to conduct the experiment to get accurate results. Helped me to understand the problem with the cedar)	