



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Daniel W. Morgan	Project Number J1129
Project Title Which Wood Burns the Longest?	
Objectives/Goals In my science fair experiment I tested nine pieces of wood to see what wood lasted the longest on an even bed of charcoal. I tested mahogany, douglas fir, lodgepole pine, juniper, oak, alder, western cedar, poplar, and redwood. I did this experiment because my family burns wood to heat our home in the winter, and I would like to know which wood will last the longest so that we could save on wood.	
Abstract Methods/Materials 1. Clean out fire place and spread briquettes out across the fire place 2. Ignite briquettes and let them heat until slightly whitened 3. Place wood on top of briquettes 4. Start the stopwatch when all pieces of wood are laid out evenly on the briquettes 5. Stop timer when wood falls apart or crumbles 6. Record all of the burning times in a data table in the journal Note: Clean the fireplace after each round is finished. Materials 5 5in. x 1in. square pieces of mahogany, douglas fir, lodgepole pine, juniper, oak, alder, western cedar, poplar, and redwood. 4ft. x 4ft. fireplace 5 bags of charcoal briquettes 1 stopwatch	
Results Mahogany had a time of 34:55, douglas fir 36:18, western cedar 16:56, lodgepole pine 16:30, redwood 29:25, oak 40:03, poplar 24:22, alder 19:13, and juniper with 24:04. Oak turned out to last the longest and lodgepole pine burned out the fastest.	
Conclusions/Discussion In my experiment I saw that all of the woods ignited in the same fashion, but that some of them hold a flame longer than others. Some of the woods would catch flame for a while and then go out while others would be doing the same thing but at different times. Also, I found out that some woods burn longer than others even if they are the same exact size. My experiment went very good without any problems. Sometimes, though, the wood looked like it wasn't burning at all, but I later found out that they were burning very rapidly. My hypothesis was correct that the oak did outlast all of the other woods.	
Summary Statement My project is about the length of time that it takes for nine different types of wood to burn on an open flame.	
Help Received Mr. Gene Hess, the woodshop teacher, helped me cut the wood; dad supervised me while I burned the wood.	