



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Jared N. Copher	Project Number S1909
Project Title Thermal Conductivity of Roof Colors	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My experiment will answer what is the relationship between roof color and interior temperature of a house. Environmental experiments show the world at large what is wrong and then purposes how to fix it. Real hard statistics and evidence is needed to fully explain to people the severity of the threats the environment is facing and how easy it can be to fix. One good example is how black roofs absorb most of the visible electromagnetic radiation given off by the sun, one by one heating the earth. Whereas a white roof reflects all that energy away from the planet.</p> <p>Methods/Materials The experimental concept is tested on two homes crafted of thick paperboard and completely sealed off by layers of scotch tape. The scale model homes have no openings except for two windows: one in the attic and the other on the main floor of the home. The difference is that one roof is white and the other is black. The tool for measurement of temperature is the Fluke Volt/ohmmeter and temperature probe attachment.</p> <p>Results The house with a black roof does have a much higher interior and surface temperature than the home with a white roof.</p> <p>Conclusions/Discussion Black roofs absorb much more electromagnetic energy than white roofs. This energy once absorbed is turned into thermal energy on the surface of the roof and inside the home. White roofs reflect most of this energy.</p>	
Summary Statement My experiment will compare the color of a roof to the interior temperature of the home, and what that might mean for the environment.	
Help Received My advisor provided advise and encouragement.	