



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Shannon Foy; Anna Haupt	Project Number 31593
Project Title Bring on the Heat	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our objective was to see which color was affected the most by heat by absorption of light. Our hypothesis was the the color black would have the greatest average increase in temperature and that red would have the least.</p> <p>Methods/Materials The materials we used were glass cups (of the same brand and make), three 60 watt lamps, measuring cup, water, thermometer, timer, and foil. The Procedure was: 1. Fill 3 glasses with 300mL of water 2. Leave in designated room for 1 hour 2. Take and record temperature 3. Pour in 15 drops of food coloring of the designated color 4. Set under lamps exactly 2 inches away from bulb 5. Set timer for 10 minutes, turn on lamps, and start 6. After the 10 minutes, take temperature and record then set for 10 more minutes 7. Do this for a total of 4, 10 minute intervals for a total time of 40 minutes 8. Repeat for all 20 tests 9. Compile data and find average temperature increase and compare</p> <p>Results Black had the highest average increase with 27 degrees Farenheit and the clear, or constant, had the lowest with 17.6 degrees Farenheit. Red resulted with an average increase of 18.8 degrees Farenheit and blue with an average increase of 24.6 degrees Farenheit.</p> <p>Conclusions/Discussion Our project concluded with our hypothesis being both right and wrong. Black did have the highest average increase of heat but the constant group ended up having the lowest. Finding these results, we looked back at our research on visible light wavelengths for answers. We found that black absorbs all wavelengthd while red absorbs all wavelengths except for red itself. This means that clear, or no color, reflects all color wavelengths. If we could do this project again, we would use these results and find how they apply when finding results in artificial light versus natural light.</p>	
Summary Statement Our project was about finding which color would affect the heating of water by absorption of light the most.	
Help Received Parents bought supplies	