



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Jodie C. Nakajima	Project Number J0526
Project Title What Is the Effect of pH Level on the Darkness of Dyed Fabric?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment is to find out how the pH level affects the color of the dyed fabric.</p> <p>Methods/Materials I varied the pH level of each solution by adding different amounts of either ammonia or vinegar to water. Once I verified the pH level by using litmus paper, I added a fixed amount of dye powder to the solution and stirred until it was dissolved. I did this procedure for three different trials, and each trial tested nine different levels from pH 4 to pH 12. Then I soaked each piece of cotton fabric in a different cup for one hour. Afterwards, I rinsed each piece with water until it didn't bleed anymore and then let it soak for another hour. The rinsed pieces then went into the washing machine with a mild detergent. After they were all washed, I took them out and let them air-dry overnight.</p> <p>Results The final result was that the dyed fabric gradually got darker until pH 9, 10 and 11 and became lighter at pH 12.</p> <p>Conclusions/Discussion In conclusion, my results were slightly different than my hypothesis. I predicted that the color would be darker if there was more ammonia (or more alkaline) mixed with the dye powder. However, my results were that pH levels 9 through 11 had the darkest color.</p>	
Summary Statement The purpose of my experiment is to find out how the pH level affects the color of the dyed fabric.	
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