



California Science Center  
**CALIFORNIA STATE SCIENCE FAIR**  
 2001 PROJECT SUMMARY

<b>Your Name</b> (List all student names if multiple authors.) <b>Jennifer E. Yeh</b>	<b>Science Fair Use Only</b>  <h1 style="margin: 0;">J0432</h1>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>Does the pH level of a Substance Have an Effect on the Normal Corroding Process of Iron?</b>	<b>Division</b> <input checked="" type="checkbox"/> <b>Junior (6-8)</b> <input type="checkbox"/> <b>Senior (9-12)</b>
<b>Preferred Category</b> (See page 5 for descriptions.) <b>4 - Chemistry</b>	
<b>Abstract</b> (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>This experiment studied the question of possible pH level involvement in the normal corrosion process of iron. Sand paper was used to scrape the protective covering off twenty iron nails. Five nails were put into each of four glass jars for thirteen days. One jar contained 125 mL water-pH 7. Another jar contained 125 mL water with one teaspoon of baking soda-pH 9. A third glass jar contained 62.5 mL hydrochloric acid and 62.5 mL water-pH 1. The fourth glass jar contained 125 mL distilled white vinegar-pH 4. The experiment was repeated 2 times. The nails in the water corroded overnight and continued to corrode, the nails in the baking soda/water did not corrode, the nails in the hydrochloric acid broke into black pieces that eventually turned into a black powder, and the nails in the distilled white vinegar went through no physical change. I can conclude that the pH level of a substance does not have any effect on the normal corrosion process of iron because there is no connection between the pH level of a substance and how much an iron object corrodes when immersed in that substance.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) Effects of the pH level of a substance on iron corrosion	
<b>Help Received in Doing Project</b> (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Father helped mixing hydrochloric acid solution	