



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Isheetta H. Madeka</b>	<b>Project Number</b> <b>J0518</b>
<b>Project Title</b> <b>Oh, No! I'm Rusting!</b>	
<b>Abstract</b>	
<b>Objectives/Goals</b> Which type of metal is the most resistant to vinegar: copper, aluminum, or steel?	
<b>Methods/Materials</b> Materials: The few materials I used were: <ol style="list-style-type: none"><li>1. Bowls</li><li>2. Vinegar</li><li>3. Different metals: aluminum, copper, steel</li><li>4. Journal/Pencil</li><li>5. Computer</li><li>6. Tray/Tweezers</li><li>7. Scissors</li><li>8. Measuring Cup</li></ol> Procedure: The experiment considered a few steps: <ol style="list-style-type: none"><li>1. Cut metal strips-all 1.5 cm (w) x9.5 cm (h)</li><li>2. Pour 1.5 cup vinegar in all bowls and place the metal strips, submerged into the bowls</li><li>3. Leave metal strips in vinegar for 6 days; monitor metal strips# condition everyday</li><li>4. Record all observations daily</li><li>5. After 6 days, take the metal strips out</li><li>6. Throw all unnecessary materials away</li><li>7. Analyze and compare all information-create graphs</li></ol>	
<b>Results</b> According to the rating index, copper is less resistant than aluminum in vinegar. The steel is least resistant in vinegar as it has rusted most with the maximum rating of 10. Aluminum turns out to be the least resistant out of all metals.	
<b>Conclusions/Discussion</b> I discovered that steel, aluminum, and copper all have a layer to protect them from RUST! For example the Statue of Liberty, still standing since 1886, it has formed a bright green layer over the years. What is that? Well, the green layer is called patina. It has formed because of all the salt in the ocean, which oxidizes. To protect the copper from its rusting it forms a layer of this bright green chemical. So, if you thought the Statue of Liberty has been painted green, you are wrong! And now you know why.	
<b>Summary Statement</b> To find out among Copper, Aluminum, and Steel, what metal would be the most resistant to vinegar?	
<b>Help Received</b> Father motivated to do more research and reviewed my result/data. Mother helped to buy the materials and helped to set up the experiment .	