



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Dayna A. Williams	Project Number J0520
Project Title Electricity and Electrolytes	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal is to better understand how the concentration of ions and strength of ions affects the flow of electrons through different types of electrolytes.</p> <p>Methods/Materials I used a 12 volt battery, bottle, some wire, light bulb, and a volt meter to measure the amount of current flowing through the selected electrolytes. The electrolytes used were water, salt water, acetic acid, hydrochloric acid, and sulfuric acid. The latter 4 were measured at different concentrations.</p> <p>Results The water and acetic acid conducted electricity as expected and according to my readings. The water conducted no electricity and the acetic acid conducted very little. The salt solution seemed to conduct electricity better at the 6 and 10 percent concentration, not at the higher concentration of salt as expected. As for the two strong acids, HCl and H₂SO₄, HCl conducted slightly more electricity than the H₂SO₄.</p> <p>Conclusions/Discussion I discovered that the higher the concentration of salt does not mean the more ions transmitted, or better conductivity. For some reason the 6 and 10 percent salt solution conducted electricity better than the 19 percent salt solution. I also noticed that the hydrochloric acid tended to transmit slightly more electricity than the sulfuric acid at both concentrations. The acetic acid transmitted a little bit of electricity and the water transmitted none. Therefore, my hypothesis was incorrect in that the more ions there are the more electricity transmitted, but it was correct in that the strong electrolytes transmit electricity much better than weak or nonelectrolytes.</p>	
Summary Statement My project is about showing how the flow of electricity is affected by the concentration of ions in a solution and the strength of ions in a solution.	
Help Received My Godfather, Anthony Walker	