



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Zian M. Ibrahim</b>	<b>Project Number</b>  34956
<b>Project Title</b> <b>Electrolyte Challenge: Comparing the Electrolytes of Sports Beverages vs. Fruit Juices</b>	
<p align="center"><b>Abstract</b></p> <p><b>Objectives/Goals</b> To investigate whether or not sports drinks such as Gatorade and PowerAde have more electrolytes than orange juice (freshly squeezed) and Coconut Water. My hypothesis was that either PowerAde or Gatorade will have more electrolytes compared to Orange Juice or Coconut Water because more and more TV commercials these days promoting these sports drinks as the only source of replenishment of electrolytes after heavy work out, playing sports, or strenuous exercise</p> <p><b>Methods/Materials</b> This experiment compared several beverages such as tap water, distilled water (dH2O), PowerAde, Gatorade, Orange juice, and Coconut water to observe which one has the most electrolytes. I made conductance sensor using a scissor, drinking straw, and two pieces of copper wire and assemble the conductance measuring circuit by attaching the battery clip to the 9 V battery and alligator clips to connect the Multimeter, battery, and conductance sensor. I measured the DCA (direct current) from Multimeter when the conduction sensor was used in different bowls of beverages with three trial runs and recorded the results. Measured current were converted to Conductance by dividing the Ave. current by 9V.</p> <p><b>Results</b> Both Orange juice and Coconut water had higher Conductance compared to the sports drinks such as Gatorade &amp; PowerAde and other beverages.</p> <p><b>Conclusions/Discussion</b> My Hypothesis proved wrong. From the result it shows that both freshly squeezed Orange juice and Coconut water have higher conductance which indicates that both have the higher amount of electrolytes compared to both PowerAde &amp; Gatorade. Between Orange juice and Coconut water, Coconut water has more electrolytes. Thus, Orange juice and/or Coconut water could be used instead of the sports drinks to replenish the electrolytes for dehydration.</p>	
<b>Summary Statement</b> This experiment compared several beverages and showed which one has the highest amount of electrolytes.	
<b>Help Received</b> I received help from my father, Sajjad Ibrahim for setting up the Multimeter and the terminal conductance measurements.	