



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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Project Title Electrolyte Showdown: Sports Drinks vs. Fruit Juices	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of the project was to determine how many electrolytes different drinks had, and then compare them. The conductance (electrolytes) of distilled water, tap water, orange juice, Gatorade, Powerade, and raspberry-pomegranate juice was measured. It was thought that Gatorade or Powerade would have the most electrolytes, and orange juice would have the least, since athletes drink sports drinks, not orange juice, to replenish their electrolytes when they sweat.</p> <p>Methods/Materials A conductance sensor, attached with copper wires to a multimeter, and a 9-V battery was constructed before testing. The conductance sensor was used to measure the conductance of the six liquids. Each liquid was poured into different bowls, and tested in five trials. The conductance was recorded and then the sensor was rinsed with distilled water between each test.</p> <p>Results Surprisingly, the orange juice had the highest conductance rate (0.0058 mA) then Gatorade (0.00354 mA), Powerade (0.00294 mA), Cranberry-Pomegranate Juice (0.00192 mA), tap water (0.00053 mA), and finally, distilled water (0.000015 mA).</p> <p>Conclusions/Discussion The experiment found that orange juice has the most electrolytes, which is surprising, since sports drinks are so heavily advertised for their amount of electrolytes. Distilled water had the least electrolytes, probably because the water was purified, and doesn't have many minerals and ions.</p>	
Summary Statement In this project, six different liquids (tap water, distilled water, Gatorade, PowerAde, Cranberry-Pomegranate Juice, and orange juice) were tested to determine which had the highest concentration of electrolytes.	
Help Received Friend helped set up the conductance sensor	