



CALIFORNIA STATE SCIENCE FAIR 2006 PROJECT SUMMARY

Name(s) Daniel Dimont	Project Number J0509
Project Title Is Your Water Really Pure?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to determine whether or not the Brita Water Filter makes significant improvements in the pH, total hardness, total dissolved solids, free chlorine, total chlorine, and total alkalinity of tap, mineral, spring, sparkling, and distilled water.</p> <p>Methods/Materials In total, eight pH, total hardness, total dissolved solids, total chlorine, free chlorine, and total alkalinity trials were conducted on tap, mineral, spring, sparkling, and distilled water. For total chlorine, free chlorine, and total alkalinity the waters were tested using four Hach Aquacheck strips before and after the filter. For Total Dissolved Solids, a TDS meter was used four times before and after the filter. For total hardness and pH two strips(trials) were used before and after the filter. Also for total hardness and pH, two trials were done using pH indicator drops and hardness reagent and titrant drops before and after the filter. The results for total hardness and pH with the two different testing devices were combined to make an average just like the other indicators were. The five Brita Water Filter cartridges(one for each water) were all soaked in distilled water for 15 minutes before being placed into the filter. Then, 650 mL of distilled water was run through the filter three times in order to prepare it.</p> <p>Results Tap water was found to have improved the most out of all the waters after being purified through the Brita. Tap waters hardness dropped from 281.25 ppm to 50 ppm, its total dissolved solids dropped to 286 ppm from 468 ppm, and the total chlorine was a completely removed from the tap water. Although not as much as tap water, the Brita Filter did make significant improvements in the purity of all the other waters.</p> <p>Conclusions/Discussion My results only agreed with the part of my hypothesis that predicted tap water to contain the most chlorine. However they disagreed in that distilled water did not have the most neutral pH, mineral water did, mineral water did not contain the most ppm of total hardness, tap water did, and the Brita Filter actually did make significant improvements in the purity of these waters. Some of my results were inconsistent which could be as a result of contamination, or that the filter didn't not always do the same thing to the pH and total alkalinity of these waters, or both.</p>	
Summary Statement My project is about testing various waters with various purification indicators before and after being run through a Brita Water Filter and measuring the differences.	
Help Received Mother helped design board; San Diego COunty Water Authority provided testing devices; Teacher helped overall with supervision, conduction, etc.	