



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Samantha B. Royall</b>	<b>Project Number</b> <b>J1124</b>
<b>Project Title</b> <b>Which Water Filter Is Best?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective was to see how different types of water filters (sediment and carbon) affect the pH level, total alkalinity, total chlorine, total hardness, iron level, copper level, nitrate level, and nitrite level of different types of water (sea water, Petaluma River water, tap water).</p> <p><b>Methods/Materials</b> In my experiment, my materials consisted of coffee filters, Brita Water Filter refills, milk jugs, and plastic containers to create these two different types of water filters. It was also crucial to have a water quality test kit and water from the Petaluma River, the tap, and the ocean. I made two different contraptions out of the two filters, the milk jugs, and the plastic containers to test my water with by pouring the water through the two filters.</p> <p><b>Results</b> Most of my results were consistent, some of the levels however were raised or lowered drastically. For example, the sea and tap water pH levels with the carbon filter went from a safe level, to a highly acidic level. The sea water chlorine levels with the sediment filter were also lowered to an unsafe level.</p> <p><b>Conclusions/Discussion</b> Based on my results, I was able to see how the two different filters affected the three water samples. In some ways, my hypothesis was supported, but in other ways, it was not. Since some of my results were so far off of what I had originally thought in my hypothesis, I think that some of the tests were not accurate.</p> <p>I also realized that it might not be safe to filter tap water with a carbon filter because it results in a highly acidic pH level. The fact that I used bleached coffee filters was a confound because there is chlorine in bleach which is why the chlorine level was raised for most of the sediment filter results.</p>	
<b>Summary Statement</b> My project was about how different types of water filters (sediment and carbon) affect different levels in water (sea water, Petaluma River water, tap water).	
<b>Help Received</b> Father helped me cut the containers, mother helped me collect river water samples.	