



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Kaitlin J. Bakhshian	Project Number J0902
Project Title Got Carbon: Does the Density of Carbon Particles in a Filter Increase Filter Effectiveness?	
Abstract Objectives/Goals The purpose of my project is to determine which is better at removing chlorine from water: a tightly-packed (commercial) carbon filter or a loosely-packed (homemade) carbon filter. Methods/Materials My materials are an old pickle jar, water bottles, a peristaltic pump, a micropipetor, two 12-volt batteries, connecting wires, two plastic cups, activated loose carbon, a store bought water filter, clear tubing, and rubber stoppers. I also used Clorox, a glass stirring rod, distilled water, and a chlorine test kit. I first tested the amount of chlorine in the distilled water. None was detected. Next, I measured and added chlorine to a measured amount of water, and checked the amount with the chlorine test kit. I then pumped the chlorinated water through each of the filters. Then I tested the amount of chlorine in the filtered water. I tested seven different concentrations of chlorine in water. Results The filter from the store with tightly-packed carbon removed more chlorine, and the homemade filter with loosely packed carbon removed less chlorine. Both filters were ineffective at removing chlorine from the lower concentration solutions. The homemade filter was ineffective at removing chlorine from the higher concentration solutions. Conclusions/Discussion I confirmed my hypothesis that the commercial filter with tightly-packed carbon worked better to remove chlorine than the loosely-packed carbon filter that I made myself.	
Summary Statement My project is about whether the density of activated carbon in a filter effects its performance in removing chlorine from water.	
Help Received My dad helped me design & assemble the project board, including the pump, the batteries, and the tubing system. He also did the power tool work. My mom helped me write my report & this application. I did my log book alone. I ran the experiments at school with my dad and my science teacher.	