



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Louis Primeau	Project Number J1510
Project Title The Effect of Elevated CO(2) on the Growth of Freshwater Algae	
Abstract Objectives/Goals To find the effect of elevated CO2 on the growth of freshwater algae. Methods/Materials Procedures: 1. I collected pond water with algae 2. I made a CO2 source using yeast to ferment sugar in a bottle 3. I grew algae with plenty of light, nutrients and water, in 4 bottles. In two bottles I bubbled extra CO2 by connecting them using the soft tubing to the CO2 source. The other two bottles were used as controls. 4. I counted the number of cells in a fixed volume of water using the microscope for each bottle each day for a period of 15 days. Materials: 1. 6 one-gallon clear-plastic bottles 2. 1 aquarium pump and light 3. 4 packets of yeast and 8 cups of sugar 4. 1 bottle of pond water 5. 25 ft soft tubing, 6 ft hard tubing 6. Miracle-Gro fertilizer 7. 1 microscope, 1 hemocytometer, and 1 digital microscope camera Results The average growth rates of the algae read as follows: The control bottles had an average growth rate of 0.14 new cells per cell per day, while the elevated CO2 bottles had an average growth rate of 0.23 new cells per cell per day. Conclusions/Discussion Elevated CO2 does affect the growth of freshwater algae. My results are in accord with my hypothesis. The doubling time for the population of algae cells in the control bottles was 5 days, while the doubling time for the bottles with elevated CO2 was only 3.6 days.	
Summary Statement My project focused on the growth of algae with elevated CO2	
Help Received My dad helped write the Matlab script and got me my microscope.	