



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Michael H. Ho	Project Number J1910
Project Title Carbon Dioxide: The Indispensable Role It Plays in Photosynthesis for Aquatic Plants	
Objectives/Goals The purpose of my experiment was to examine how carbon dioxide affects an aquatic plants growth speed. My goal was to figure out whether or not the plants were influenced by the increased amount of CO2 concentration their surroundings contained.	
Abstract Methods/Materials During my experimentation, I tested 2 of the same types of plants that were placed in separate containers under the same environment and conditions(amount of light, temp.,water). One of the plants however, was grown with a DIY CO2 system kit that produced carbon dioxide using the reactions between citric acid, baking soda, and water. The other plant had an air pump that generated the necessary amount of carbon dioxide the plant needed to survive. The growth rate(GR)was monitored and determined for each plant. Unfortunately, I wasn't able to record the percentage of the amount of CO2 concentration in the environment because the equipment needed for that information was way over my budgets expenses.	
Results The plant that demonstrated the greatest rise in GR was the one with the CO2 system kit. The whole experiment took a total of exactly 8 weeks. At the end of the experimentation the plant with the CO2 system kit turned out to be 145g and the plant without it turned out to be 55g. Both plants started at 15g and made progress in growth as each week passed. The plant with the increased dosage of CO2 weighed nearly 3x more than the plant without it. That means that increasing CO2 concentration in the photosynthesis process is nearly 3x more effective than the process with just regular air.	
Conclusions/Discussion In the end of my experiment, my hypothesis was correct. It was correct because I have always thought that carbon dioxide majorly impacted a plants growth rate ever since the beginning of my project. I came to my conclusion because as I observed the data, the plant with the more concentrated CO2 environment had a much faster growth rate than the other. I can now conclude that carbon dioxide plays an INDISPENSABLE role and is also considered as an important feature in the photosynthetic function.	
Summary Statement The significant role carbon dioxide plays in photosynthesis and whether or not the dosage will affect a plants growth rate.	
Help Received father supplied all the materials and covered the costs as well	