



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Nicole B. Chew	Project Number 22650
Project Title The Effect of Colored Light on Chlorophyll Production of Oxygen	
Abstract Objectives/Goals The objective of my project was to discover which color wavelength of light, red, blue, green, yellow, or white, would best stimulate chlorophyll production of oxygen. Methods/Materials Five test tubes were prepared by wrapping each with an equal amount of color plastic wrap. Equal amounts of the aquatic plant elodea were placed in each test tube under water admitting no air. After exposing all tubes to equal amounts of lighting under the plant table for several days, the amount of oxygen produced by the elodea was extracted from the test tube. I used a syringe connected to a tube to precisely measure the amount of oxygen produced by each sprig of elodea in a different colored test tube. Results The elodea in the green test tube produced the most oxygen for most tests while the blue test tube consistently produced the least. Green produced a total of 6.09 milliliters of oxygen, red produced 3.96 milliliters of oxygen, yellow produced 2.89 milliliters of oxygen, clear produced 2.17 milliliters of oxygen, and lastly blue produced 1.71 milliliters of oxygen. Conclusions/Discussion I conclude that the blue light stimulates chlorophyll the best. I conclude this because the green plastic wrapped test tube containing elodea produced the most oxygen. The green plastic wrap reflected green wavelengths of light. However it allowed blue and red wavelengths of light to pass through the test tube. Since blue and red wavelengths of light stimulate chlorophyll the best, the green-wrapped test tube should have produced the most oxygen. The blue and red plastic wrap however, blocked blue and red wavelengths of light; therefore less oxygen was produced. The blue plastic wrap produced the least amount of oxygen, thus concluding that it probably stimulated chlorophyll the best.	
Summary Statement By measuring the production of oxygen from the aquatic plant elodea, I attempted to discover which color wavelength of light best stimulates chlorophyll.	
Help Received	