



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> Collette K. Hamamah	<b>Project Number</b> <b>J1610</b>
<b>Project Title</b> <b>How Does the Wavelength of Light Affect the Rate of Photosynthesis?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this experiment is to determine how the wavelength of light affects photosynthesis. My independent variable is the wavelength of light in nanometers (nms). My dependant variable is the amount of Oxygen produced in milliliters (mLs). I hypothesized that the rate of photosynthesis would be higher in the red (600-700 nm) and blue (400-500 nm) lights and lower in the green (500-575 nm) light. <b>Methods/Materials</b> Halogen light and 3 filters were used to obtain the desired wavelengths. Elodea in 3% NaHCO <sub>3</sub> solution was exposed to blue, green, and red lights for 12 hours and the produced Oxygen was measured. <b>Results</b> After adjusting for the intensity of different wavelengths in the Halogen light, Oxygen production using the 400-500 nms filter was 0.42 mLs; 500-575 nms filter was 0.24 mLs; 600-700 nms filter was 0.73 mLs. <b>Conclusions/Discussion</b> The rate of photosynthesis was higher in the red and blue lights and lower in the green light. The findings supported my hypothesis.	
<b>Summary Statement</b> I tested the affect of different wavelengths of light on the rate of photosynthesis by exposing the same weight of Elodea immersed in sodium bicarbonate solution to three wavelength ranges and measured oxygen production over twelve hours.	
<b>Help Received</b> My parents and science teacher helped me obtain material and setup for my experiment.	