



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) <p align="center">Gwyneth C. Elliott</p>	Project Number <p align="right">36662</p>
Project Title <p align="center">Algae</p>	
<p align="center">Abstract</p> <p>Objectives/Goals If algae grew in sixteen ounce galvanized steel, silicone, colored plastic, or ceramic bowls placed in simulated light, shade, or darkness which would have: A higher light absorbance? Lowest light transmittance? Higher pH level? Highest weight of grown Algae?</p> <p>Methods/Materials Using a total of twelve bowls; 3 galvanized steel, 3 silicone, 3 ceramic, and 3 colored plastic. Containing small amounts of algae in three different environments, complete darkness, light and shade. How is algae growth affected? Results are measured by comparing pH level, temperature of water, transmittance of light and absorbency of light for each bowl. Tests for pH were done every other day for a 2 week period. Then the water and Algae were changed and another test was completed for 2 weeks. This set up was done for five test to be completed. To find the transmittance and absorbance a light spectrophotometer was used at different wave lengths and the data was recorded. A pipet was used with the light spectrophotometer. pH strips and tablets were used during the experiment to get the pH reading. A thermometer was used for temperature readings. The water used in this project was distilled water each bowl had 2 cups.</p> <p>Results During testing it was discovered that out of galvanized steel, silicone, ceramic, and colored plastic. The ceramic bowl in the shaded environment had the highest readings for pH level, final algae weight, and light absorbance with the lowest transmittance of light. Ceramic shade had the best environment for algae growth based on temperature, pH and light levels. Reference FAO document.</p> <p>Conclusions/Discussion The hypothesis was that the galvanized steel bowl placed in a simulated light location would have a higher pH, algae weight (growth), and light absorbance. With a lower light transmittance level at set wavelengths. The hypothesis was proven wrong. The highest pH level was 7.0 for ceramic in the shade environment. The highest weight was also, ceramic in the shade environment with average weight of 1.02. Ceramic shade did not have the highest light absorbance level.</p>	
<p>Summary Statement</p> <p>Using 16 ounce bowls made of galvanized steel, colored plastic, ceramic and silicone which will grow the most algae, have the highest light absorbance, with the lowest transmittance light level, the highest pH and weight of grown algae?</p>	
<p>Help Received</p> <p>Received help writing my research paper for this project. Was provided help by my local water district in the form of being allowed to bring an algae sample into their lab. At the lab I was given the opportunity to use a high powered microscope. On my own was allowed to prepare a slide and put it under the</p>	