



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Mckenna N. Grayson	Project Number J1508
Project Title Introducing Algae	
Objectives/Goals My hypothesis is that if fertilizers high in nitrogen and phosphorus are added to pond water, then the sample with the highest percentage of fertilizer will cause the most amount of algae growth in the water.	
Abstract	
Methods/Materials Prepare 15 glass jars with varying levels of fertilizer as follows: 5 jars with pond water, 5 jars with pond water and 50ml of fertilizer, 5 jars with pond water and 100ml fertilizer. Add 10 ml of algae sample to each jar. Place all samples in the Hydrofarm plastic tray with vented dome under the EnviroGrow Fluorescent grow light (24 hours/day). Observe the growth of the algae every 3 days for a 3 week time period. At the end of the test period, measure the amount of algae growth by evaluating the total dissolved solids with a TDS test meter and by evaluation of the dry weight of the filtered algae using a Flinn Scientific Inc. scale.	
Results As predicted, the test results show that if fertilizers high in nitrogen, phosphate and potassium are added to pond water then the sample with the highest percentage of fertilizer will cause the most amount of algae growth. After allowing three sets of samples to grow algae in a controlled environment for 21 days I found that the control sample of pond water without fertilizer, had algae growth that weighed the least at an average of 0.152g. The sample with 50 ml fertilizer added resulted in algae growth that weighed 0.254 g. The third variable containing 100 ml fertilizer grew the most algae weighing an average of 0.378 grams, more than twice the level of the pond water without fertilizer.	
Conclusions/Discussion As my hypothesis suggest, the pond water with the most fertilizer grew the most algae. These results are important to know and supported by my research on the topic. Fertilizer usage has many benefits including helping farmers grow bigger crops and individuals grow more beautiful flowers and greener grass. The same fertilizer entering streams, ponds and lakes as run-off can result in an overgrowth of algae or algae blooms that are unhealthy and damaging to the ecosystem.	
Summary Statement To determine if the amount of fertilizer added to pond water will impact the amount of algae growth.	
Help Received I received help from several people. My dad helped me get the water from the pond and prepare the samples with me. My mom helped me get the supplies and weigh the samples. My teacher, Mrs. Oggiano let me borrow a scientific scale and helped teach me how to properly complete my science fair	