



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Wade W. Frey	Project Number J1711
Project Title Fishy Fertilizer	
Abstract Objectives/Goals The objective of this project is to determine what effect fertilizers have on aquatic life. Methods/Materials In this experiment I used nine one gallon graduated containers, and in each I put ten minnows and one tablespoon of duckweed. These represented aquatic habitats. After each habitat was set up, I placed one tablespoon of Miracle Grow soluble plant food in three containers, one tablespoon of urea concentrate used by farmers in three more containers, and left the remaining three containers devoid of man made substances for control. A cup of water was scooped out of each habitat and mixed with that tank#s designated substance. Once the contaminated water was mixed back in with the habitat, I started a stopwatch and took notes on what happened. Results Based on my observations, none of the fertilizers had any effect on the duckweed. I was really surprised to learn that the minnows in the Miracle Grow soluble plant food tanks did not survive. The minnow#s activity inside the containers of the urea concentrate slowed dramatically. Only two minnows in this experimental group did not survive. The control group lost three minnows over all. Because of this, I can assume that the urea concentrate had no effect on the experimental group. Conclusions/Discussion Based on my results, my hypothesis was supported in that the Miracle Grow soluble plant food had the greatest effect.	
Summary Statement My project tests the effects of fertilizer on aquatic life.	
Help Received Mom and Dad helped me gather supplies.	