



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Adrian M. Mendoza	Project Number J1727
Project Title The Effects of New and Used Auto Fluids and Detergents on Aquatic Azolla Plants	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Which pollutant is more toxic to the aquatic azolla plant?</p> <p>Methods/Materials Procedure for testing pollutants on aquatic plants 1.Pour 200 ml of water into the fish bowl. 2.Rinse the debris off the azolla. 3.Fill the circumference of the bowl with azolla. 4.Fill one pipette with 10 ml of the pollutant, and then pour the pollutant into the water of the fish bowl. 5.Then place outside for five (5) days and ten (10) days, 120 hours and 240 days. 6.Graph the discoloration (died) rate of the azolla. Material 70 small glass fish bowls # 70 plastic pipettes; Ten (10) ml of motor oil per bowl; Ten (10) ml of antifreeze per bowl; Ten (10) ml of detergent per bowl; Ten (10) ml of used detergent bowl; Ten (10) ml of used antifreeze per bowl; Ten (10) ml of used detergent per bowl; 200 ml of water per bowl; One one by one cm (1x1) transparency grid; One (1) 500 ml measuring cup; 57 cm³ of aquatic azolla plant per bowl (70).</p> <p>Results The results of my investigation on the toxicity levels of new and used pollutants on aquatic plants indicate detergent and used motor oil are the most toxic pollutants on aquatic plants. The detergent was the most toxic to the azolla out of the new pollutants. Azolla discoloration rate with detergent: Average amount of discoloration= .99 The motor oil was the most toxic used pollutant to the azolla. Azolla discoloration rate with used motor oil: Average of discoloration= .98</p> <p>Conclusions/Discussion After completing my investigation on the toxicity levels of used pollutants and pollutants on aquatic plants, I found my hypothesis for the antifreeze was incorrect and my hypothesis for used motor oil was correct. My original hypotheses# were that antifreeze would be the most toxic pollutant and the used motor oil would be the most toxic for the used pollutants.bv</p>	
Summary Statement The purpose of my science project is to determine the toxicity levels of new and used pollutants on aquatic azolla plants.	
Help Received Parents helped matting board.	