



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Conor G. Goulart</b>	<b>Project Number</b> <b>J1008</b>
<b>Project Title</b> <b>Toxins: Fresh Water Microorganisms vs. Household Chemicals</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I chose this science project because I was concerned about the effect on the environment through the use of certain household chemicals. I wanted to know which household chemicals effected local fresh water micro-organisms the most.</p> <p><b>Methods/Materials</b> Windex, Shout &amp; Lime Away were added to samples of local lake water containing three types of micro-organisms. I confirmed that all water samples contained the same micro-organisms. I placed 100ml. of the water sample into a jar then added 3 drops of one household chemical to it. I waited 5 minutes prior to observing the sample. 2 drops from the jar were placed on a slide and examined for any impact on the micro-organisms. Each test was repeated increasing the chemical one drop per 100ml. of water with a maximum of 7 drops for each chemical. Observations were recorded regarding color, shape an activity changes for each micro-organism.</p> <p><b>Results</b> The experiments &amp; data confirmed my hypothesis by proving that Windex, Shout &amp; Lime Away had a toxic impact on the micro-organisms. Windex &amp; Shout caused less damage than Lime Away to the micro-organisms. 3 to 4 drops per sample of Windex or Shout harmed the micro-organisms but did not kill all of them. When the amounts were increased to 6 to 7 drops per sample all the micro-organisms died. In comparison, Lime Away killed all the micro-organisms with 3 to 4 drops. The ingredients were not listed on any of the cleansers but Lime Away had the most severe warning on the label.</p> <p><b>Conclusions/Discussion</b> I was able to confirm that Windex, Shout &amp; Lime Away had a harmful impact to fresh water micro-organisms. The more potent the cleanser, the more toxic results were observed. These tests are important because they tell us that toxins are potentially more dangerous than we think and simply using them &amp; pouring them down the drain will introduce these chemicals to our environment. The knowledge gained from this experiment is useful because it also applies to people who illegally dump chemicals into the environment. It also helps realize that synthetic, non-natural, or man-made chemicals can be lethal and deadly to the environment.</p>	
<b>Summary Statement</b> Testing the toxic impact household chemicals have upon fresh water micro-organisms.	
<b>Help Received</b> A note of thanks to my Mom who helped transfer data onto a spreadsheet; to my Dad who helped in my abstract & graph; to Renee Culver, who read my report and gave great advice, and to all the mentors affiliated with San Joaquin County Office of Education who helped me prepare for the State Science Fair.	