



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Monica B. Le	Project Number 29074
Project Title Examining Toxicity Rate of Household Cleaners through the Use of Gryllus assimilis	
Abstract Objectives/Goals The objective of this project was to determine the toxicity rate of household liquid cleaning projects by timing the time of death of gryllus assimilis (field crickets). I substituted human test subjects with the gryllus assimilis because of the gryllus assimilis sensitive respiratory system, and the liquid cleaners that I used were Clorox, Pine-Sol, Windex, and water (control) Methods/Materials I tested by first taking a correctly cut piece of O-Cel-O sponge, and placing it into a (red) Solo party cup. Second, I poured four (4) milliliters (mL) of the correct chemical into the ten (10) milliliters (mL) graduated cylinder, and poured the chemical liquid within the graduated cylinder onto the sponge. Third, I took two (2) adult field crickets and inserted them into the cup. Fourth, I quickly take the correctly cut piece of Kirkland Signature food wrap, and put it over the cup. Fifth, I immediately started my stopwatch, and examined the crickets within the cup. Last, when the field crickets died, I immediately stopped my stopwatch, and recorded the time under the correct trial number and liquid. Results The results of my testing showed that Clorox had an average death rate time of 271.86 seconds, a high of 26 seconds, and a low of 720 seconds. Pine-Sol had an average death rate time of 319.33 seconds, a high rate of 47 seconds, and a low rate of 965 seconds. Windex had an average death rate time of 650 seconds, a high of 103 seconds, and a low of 1,439 seconds. Water had an average death rate of 3,065.33 seconds, a high rate of 217 seconds, and a low rate of 12,403 seconds. Conclusions/Discussion My results concluded that Clorox is the most toxic out of my tested house hold cleaners and that one should take care when using this product. A person needs to consider how toxic their cleaners might be when using it in a confined area, and when using it around people who have breathing issues.	
Summary Statement I replaced humans with gryllus assimils (field crickets), and proved that Clorox was the most toxic cleaning liquid and that water was the least toxic liquid within this project.	
Help Received Miss Given - teacher; Mom - board set up; Dad - transportation and binder materials; Katy Tomlinson	