



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Aaron A. Rothman	Project Number 34889
Project Title Can Green Clean? A Comparison of Name Brand and Environmentally Safe Detergents	
Objectives/Goals My objective was to find out if a specific brand of environmentally safe detergent provided greater stain removal properties than major brands of detergent. Abstract Methods/Materials The main materials used were six detergents, three environmentally safe detergents (Seventh Generation, All Free and Clear and Method) and three name brand detergents (Tide, Gain and Arm & Hammer with Oxi-Clean). I chose four stains (grass, juice/peach, ink and lipstick) and applied each stain on a 100% cotton test cloth. I used three sample tests per detergent for a total of eighteen tests. To determine the results, I examined each completed sample under a microscope and counted the number of remaining stained fibers per stain. Results The environmentally safe detergent Seventh Generation, was superior over the other five detergents (Tide, Gain, Arm & Hammer with Oxi-Clean, All Free and Clear and Method) because it left the least amount of stained fibers on the cotton sample swatch. In my data, Seventh Generation left only 29 total stained fibers. My prediction was that Arm & Hammer with Oxi-Clean would provide the best stain removal properties because the added Oxi-Clean booster would give more cleaning power but I was incorrect. Conclusions/Discussion I learned that some environmentally safe detergents can clean as well as or better than name brand detergents for the same price. Also, I learned certain stains are difficult to clean no matter what detergent. Detergents contain a lot of chemicals that can be potentially harmful to the environment. Some factors that could have affected my results are: the types of detergents chosen, the types of stains chosen, the type of fabric chosen for the sample. I think this experient may open people's minds to using an environmentally safe detergent and not be so brand conscious.	
Summary Statement My project compares name brand detergents to environmentally safe detergents to see which one performs best.	
Help Received My mom helped purchase the supplies, my teacher Mrs. Jill Rivero helped with testing ideas, Koren Takata and Heidi Herrera reviewed my project and gave me feedback.	