



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Emily Huang	Project Number 34419
Project Title Which Soap? Comparing the Effectiveness of Taiwan and American Bar Soap in Killing Bacteria	
Abstract Objectives/Goals The objective of this experiment was to compare two countries bar soap and see how effective they were in eliminating bacteria. The goal was to see whether Taiwan bar soap, a natural soap, would be more effective than American bar soap, a commercially made soap. Methods/Materials This experiment was split into three trials. For each trial, 8 subjects washed their hands and followed the same process. First, all the subjects printed their palm into a TSA agar plate and it was incubated at 37 degrees Celsius. The first four subjects put gloves on their right hand and washed their left hand with American bar soap and then, they put gloves on their left hand and washed their right hand with Taiwan soap. For the next four subjects, they did the reverse of the other subjects. The subjects were timed for twenty seconds and they dried their hands. Their palm was printed into a plate and incubated. 16 colonies of bacteria were gram-stained to see what gram the colonies of bacteria were. Results The results show that American bar soap killed around 75-80% of the bacteria and Taiwan bar soap killed around 70 to 75 percent of the bacteria. The bar soaps killed a great amount of the bacteria on the hands but did not kill as much as expected. It was originally hypothesized that bar soap would kill around 90-95% of the bacteria but the bar soaps that was used for this experiment only killed around 70 to 80 percent. Conclusions/Discussion The data collected from testing proved that American bar soap is more effective in killing bacteria than Taiwan bar soap. American bar soap killed about 5 to 6 percent more bacteria than Taiwan bar soap. American bar soap is able to eliminate more bacteria than Taiwan bar soap because it has chemicals that kill off the bacteria.	
Summary Statement The project is about whether American bar soap or Taiwan bar soap killed more bacteria.	
Help Received Dr. Doran provided lab; Parents provided transportation; Czarinah Paco and Lindsay Bradford helped guide the project; Neighbor helped get project started	