



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Lisa A. Tripp	Project Number J1334
Project Title Eliminating Microorganisms through Handwashing	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To test the effectiveness of different hand cleaning products to reduce micro-organisms on hands.</p> <p>Methods/Materials Every day for 5 days, shower at 11:00 A.M. At 2:30 P.M. use the following methods for each product: Day 1 - no hand washing, day 2 - water only, day 3 - plain soap, day 4 - anti-bacterial soap, day 5 - alcohol hand cleaner. Use a sterile saline soaked cotton-tipped applicator to harvest micro-organisms off of each hand. Dip applicator into saline filled test tubes for each hand. Dip inoculating loop into each test tube. Swipe inoculating loop across blood agar plates in 3 directions. Put lid on plates and label each with day and method. Place in 37 degree celcius non-CO2 incubator. Make colony counts after 48 hours.</p> <p>Results Day 1 - No hand washing 48 normal skin flora, 7 bacillus species Day 2 - Water only 19 normal skin flora Day 3 - Plain soap 11 normal skin flora Day 4 - Anti-bacterial soap 48 normal skin flora Day 5 - Alcohol hand cleaner 5 normal skin flora The alcohol hand cleaner had the least number of micro-organisms, followed by anti-bacterial soap, water only, plain soap, and finally no hand washing.</p> <p>Conclusions/Discussion The alcohol hand cleaner was most effective in eliminating the highest number of micro-organisms and incubated the least number of micro-organisms. My hypothesis was correct. The alcohol hand cleaner had the least number of micro-organisms, followed by anti-bacterial soap, water only, plain soap, and finally no hand washing. I believe I obtained these results due to the effect of the active ingredients in the products being used. From this project, I have learned about micro-organisms that are common to the skin and the effect of hand cleaning techniques and products on removing them.</p>	
Summary Statement The purpose of my project ws to test the effectiveness of different hand cleaning products to reduce micro-organisms on my hands.	
Help Received I received help from my mother in conducting research, my science teacher instructed me on the report format, and the microbiology technician at Bakersfield Heart Hospital instructed/supervised me in conducting the experiment. I received supplies from the Bakersfield Heart Hospital.	