



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Alexandra A. Lamoureux	Project Number J1821
Project Title What's Best for Washing People's Hands?	
Abstract Objectives/Goals This experiment determined which type of substance was most effective at sanitizing people's hands after handling raw hamburger meat. The researcher hypothesized that if less bacteria grew after washing hands with anti-bacterial soap, then anti-bacterial soap kills the most bacteria. Methods/Materials The procedure involved a volunteer washing his hands with various substances after handling hamburger meat that was placed out for two days (allowing it to spoil). The following substances for washing were used to perform each of four trials: not washing (control group), water, regular soap, hand sanitizer, and anti-bacterial soap. After washing, the researcher swabbed the palm of the volunteer's hand with a Q-tip and smeared the Q-tip on the agar inside a petri dish. The bacterial growth in each petri dish was measured over a nine-day experimentation period. Results The researcher found that a small amount of bacteria grew slowly after hands were washed with anti-bacterial soap. When washing with water, hand-sanitizer, and regular soap larger amounts of bacteria grew quicker. When hands weren't washed, large amounts of bacteria grew the quickest. Conclusions/Discussion The results show that anti-bacterial soap grew the least bacteria, which supports the researcher's hypothesis.	
Summary Statement This experiment determined which type of substance was most effective at sanitizing people's hands after handling raw hamburger meat.	
Help Received My father smeared hamburger meat on his hands and washed them in various substances in order for the researcher to swab them. My mother purchased the petri dishes and agar.	