



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Alyssa R. LoGalbo   | <b>Project Number</b><br><b>J1699</b> |
| <b>Project Title</b><br><b>Testing the Effectiveness of Hand Washing vs. Using Hand Sanitizer</b>   |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>Students are often presented with the option of using hand sanitizer to clean their hands instead of going to the bathroom and washing with soap and water. The purpose of my project was to determine which method actually does a better job of cleaning hands.</p> <p><b>Methods/Materials</b><br/>The dominant hands of 10 students chosen at random were swabbed before and after cleaning their hands. The first set of trials, students cleaned with soap and water and the second set of trials students used hand sanitizer. The bacteria gathered from the swabs were cultured in blood agar petri dishes for 40 hours at 26 degrees Celsius. Bacteria colonies that had grown in the dishes were counted and recorded for analysis.</p> <p><b>Results</b><br/>Five students' hands were cleaner when washing with soap and water and five students' hands were cleaner when using hand sanitizer. When compared to how dirty the hands were before washing, students' hands were 59% cleaner using hand sanitizer versus 50% cleaner using soap and water.</p> <p><b>Conclusions/Discussion</b><br/>I was not able to conclude which method of cleaning your hands worked better. There were different results for different students and some students' hands were actually dirtier after cleaning than before. From observing how students washed and considering the results of my research, I would conclude that it is less important what you clean with and more important that you do a thorough and proper job.</p> |                                       |
| <b>Summary Statement</b><br>My project was to determine, under real-life conditions, whether hand sanitizer or hand washing is more effective at cleaning students hands.   |                                       |
| <b>Help Received</b><br>Mother helped set up board; Father helped with the incubator; received agar and petri dishes from area hospitals.   |                                       |