



# CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

<b>Name(s)</b> <b>Kristina M. Renda</b>	<b>Project Number</b> <b>J1327</b>
<b>Project Title</b> <b>Where Does Bacteria "Hang Out" on the School Play Yard?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> People have different degrees of concern regarding germs and bacteria in public places. Their fears range from none at all to severe phobias. The objective of my experiment was to identify a place (the school play yard) where large numbers of people frequent daily and determine which of those areas have the highest level of bacteria.</p> <p><b>Methods/Materials</b> The materials I used were 9 sterile petri dishes with Standard Plate Count Agar, 9 sterile cotton swabs, 100 milliliters of sterile water, 9 adhesive labels for the petri plate, one heat lamp for incubation, one empty shoe box, and one sheet of dark construction paper to use as a counting grid. I took the sterile cotton swab wetted with sterile water and rubbed the surface being tested with the swab covering one square inch in each location. The locations I chose were the receiver of a pay phone, stair railing, monkey bars, slide, soda machine button, water fountain, picnic table, bench, and a basketball. I then rubbed the cotton swab over the sterile agar in an individual petri plate for each location. I incubated the bacteria for 48 hours by placing the petri plates under a heat lamp at 90 degrees F. After incubation I counted the bacteria colonies for each location using a dark colored paper with one centimeter grids drawn on it.</p> <p><b>Results</b> The following bacteria colony counts were recorded for each location on the school play yard; water fountain = 56, soda machine = 78, bench = 187, monkey bars = 610, stair railing = 1,038, pay phone receiver = 1,365. The remaining three locations; picnic table, basketball and slide, had the growth of bacteria that was too numerous to count. The presence of bacteria colonies were so great, they merged together into clumps which could not be recorded in a count.</p> <p><b>Conclusions/Discussion</b> I have concluded that the picnic table was the most unsanitary surface of the nine locations sampled. After inspecting the surfaces, it was easy to understand why this was so. The surface of the picnic tables are not smooth. They have a porous surface that provides a great location for bacteria to hide. Additionally, it does not appear to me that the tables are cleaned on a regular basis with disinfecting solutions. And lastly, the tables had residue from the kids' lunches on the surface giving the bacteria a readily available food supply.</p>	
<b>Summary Statement</b> This project identifies where bacteria is most likely to be found in common areas on the school play yard.	
<b>Help Received</b> To prepare for my experiment I received assistance from the scientists at the Safeway Laboratory and Mr. Chuck Stoffers, Director of Food Safety for Safeway Inc. They supplied me with materials and described the proper way to take samples.	