



# CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

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<b>Project Title</b> Is Ice All You're Getting?	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of this project was to see if the ice in fast food restaurants meets water quality standards. My hypothesis was that some of the restaurants I tested would show bacterial contamination in their ice, and that restaurants with ice machines open to the public would have more bacteria than the ones that weren't available to the public.</p> <p><b>Methods/Materials</b> I used 41, 240 ml containers, with lids, 41 Petri dishes, 41 pipettes, and 41 Culture Plates. For my procedures I went to eight restaurants and collected five ice samples from each restaurant. Then I placed the ice in sterile containers and put them in my cooler. For my tests I used a culture medium called Coliscan Easygel. I used sterile pipettes and extracted sterile water from a 240 ml container as a sterile control. 3ml of each melted ice sample was transferred into the Coliscan and poured into Petri dishes, I sealed the plates and put the samples into an incubator at 36 degrees Celsius. Then I waited 48 hours for my results.</p> <p><b>Results</b> Panda Express, Wendy's, and Taco Bell ice samples all showed no bacterial contamination and grew no colonies. Kentucky Fried Chicken and Chipotle ice samples grew only a few colonies in the culture plates. McDonald's ice samples had the second greatest amount of bacteria of all the restaurants. In one of the McDonald's samples, the plate contained 486 total Coliform and non-Coliform colonies which represented an estimated 14,985 colonies per 100ml of water. Jack in the Box had the greatest amount of bacteria of all the restaurants tested. In one of the Jack in the Box plates there was an estimated 768 colonies, mostly Coliforms, corresponding to 21,545 colonies per 100 ml of water!</p> <p><b>Conclusions/Discussion</b> It is clear that in some restaurants their methods of handling ice need to change. If I were to pursue this project further, I would test multiple restaurants such as several Jack in the Box or McDonald's restaurants. I would also try testing the restaurants one day each week for several weeks to develop an average for a more reliable result.</p>	
<b>Summary Statement</b> The goal of this project was to culture ice samples from fast food restaurants to determine if the ice would meet drinking water quality standards.	
<b>Help Received</b> I would like to thank my mother for driving me to the various fast food restaurants, and I would like to thank my science teacher for her time and proof-reading.	