



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Srikant Sagireddy; Elliott Stenzler</b>	<b>Project Number</b> <b>J1511</b>
<b>Project Title</b> <b>Should You Dispose Disposable Water Bottles?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of our project was to determine if reusing and refilling disposable water bottles is potentially unsafe to the consumer due to increased levels of bacteria growth.</p> <p><b>Methods/Materials</b> Four subjects, two male and two female, who consumed Nestle brand of water from disposable water bottles over specific time periods. Water bottle one was consumed the first day and swabbed. Water bottle two was consumed the first day, refilled with bottled water to avoid tap contamination, and consumed a second day and swabbed. Water bottle three was consumed the first, second and third days, refilled twice and swabbed after the third day. Bacteria counts were taken and plotted after three days.</p> <p><b>Results</b> : A substantial growth of bacteria occurred as the time periods of drinking and refilling increased. Water bottle one did not show a significant growth of bacteria when compared to the control, however, bottle two had a 30% increase in bacteria while the bottle three had a 180% increase. Additional trials are currently being conducted. All further data and results will be reported.</p> <p><b>Conclusions/Discussion</b> When disposable water bottles are reused and refilled, bacteria growth exists and increases the longer the water bottles was reused and refilled. This project confirms that consumers should be concerned when reusing and refilling these bottles. Manufacturers of these bottles should equally be concerned and can conduct further studies on this matter. The next step with this study would be to classify the type of bacteria growth and how much is needed to do actual harm. Different brands of disposable water bottles can also be evaluated.</p>	
<b>Summary Statement</b> To determine if reusing and refilling disposable water bottles poses a potential risk to the consumer due to growth of bacteria.	
<b>Help Received</b> Mrs. Stenzler and Mrs. Sagireddy for overseeing the safety practices of growing bacteria. Ms. Pompeya for teaching Elliott and Srikant how to make their own swaps and nutrient agar. She also initially assisted them in safe and effective procedures for growing and disposing of bacteria.	