



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jonah Kaye</b>	<b>Project Number</b> <b>J1112</b>
<b>Project Title</b> <b>Taste Buds vs. Ice</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I set out to determine if lowering the temperature of the human tongue would affect the taste buds' ability to recognize the different tastes of sweet, sour, bitter and salty. I hypothesized that lowering the tongue's temperature would negatively affect the taste buds' ability to determine the various tastes. <b>Methods/Materials</b> Twelve subjects, 6 males and 6 females ranging in age from 9 to 74 years, each tasted liquids comprised of distilled water and increasing concentrations of another component representing one of the four major tastes: sweet (sugar), sour (lemon juice), bitter (coffee grounds) and salty (salt). Each subject sampled the solutions until he/she could identify each specific taste. After the results were recorded, each subject proceeded through the same testing again after first lowering the temperature of his/her tongue by holding ice on the tongue for 15 seconds. <b>Results</b> Surprisingly, the overall results did not show a difference in the subjects' ability to taste sweet, sour, bitter and salty after lowering their tongue's temperature. However, after looking at the specifics of the data, I was able to see a slight difference between male and female subjects. The male subjects actually had a slightly heightened ability to recognize the various tastes with a lower tongue temperature. The female subjects' ability to do so was negatively affected by lowering their tongues' temperature. Also, there was no difference between older and younger subjects. <b>Conclusions/Discussion</b> Sadly, my hypothesis was incorrect. Overall, this experiment suggests that lowering the temperature of the human tongue does not affect its ability to taste. This result may not be completely accurate, however, for several reasons. There may have been flaws in the experiment's design. For example, sample size, method of lowering tongue temperature and external influences on the subjects may have contributed to possible inaccurate results. In any case, I was impressed by the tongue's ability to taste despite subjecting it to adverse conditions.	
<b>Summary Statement</b> Does lowering the temperature of the human tongue affect the taste buds' ability to taste?	
<b>Help Received</b> My father helped proofread and type the written parts of my exhibit.	