



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> Camden K. Louie	<b>Project Number</b> <b>S1112</b>
<b>Project Title</b> <b>The Effects of Different Liquids on the Vocal Pitch of Homo sapiens</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project is to measure the change in vocal pitch of Homo sapiens caused by drinking different liquids. <b>Methods/Materials</b> The informed consent of ten musically trained teenagers was obtained prior to testing. First I recorded the pitch accuracy of the singer with a Seiko ST757 chromatic tuner by having them sing one note for two seconds before drinking any of the test liquids (and after having not consumed any liquids for 90 minutes prior to the experiment). Then the singer consumed one cup of a test liquid. I then had the singer sing the same note for two seconds immediately after drinking the liquid and then at two-minute intervals for ten minutes. <b>Results</b> When the subjects were given water, there was little to no change in pitch accuracy. When the subjects were given milk, an immediate change in the pitch occurred from singing on pitch to singing flat (below the pitch). About eight minutes later the subjects returned to being on pitch. When the subjects were given coffee or Coke, there was a gradual change in pitch accuracy from being on pitch at two minutes to being sharp (above the pitch) at ten minutes. <b>Conclusions/Discussion</b> My conclusion is that pitch accuracy is dependent upon the type of beverage that one has before singing. Drinking milk makes a singer's pitch flat for a few minutes before returning to a consistent pitch, drinking Coke and coffee makes one's pitch sharp after a few minutes, and drinking water does not affect the pitch accuracy of a singer.	
<b>Summary Statement</b> My project was about the effects of different liquids on the vocal pitch of Homo sapiens.	
<b>Help Received</b> No help received.	