



CALIFORNIA STATE SCIENCE FAIR 2010 PROJECT SUMMARY

Name(s) Taylor C. Hemphill	Project Number J1308
Project Title The Buzz Around Town	
Objectives/Goals My project was to determine at what frequency range people lose their ability to hear high frequency sounds.	
Abstract Methods/Materials An iPod Touch was downloaded with the 'Dog Whistle Application'. Over 100 subjects ranging in age from 8 to 30+ years were asked to turn so their back was facing tester and indicate by raised hand when they could hear the beeping noise of the Dog Whistle Application. The testing pitch range began at 8,000 kHz and continued upwards in increments of 2,000 kHz as long as the subject indicated they could hear the beeping noise. Once 14,000 kHz was reached the pitch was increased in increments of 1,000 kHz until subject could no longer acknowledge sound. Once the pitch was not acknowledged the pitch was decreased by 1,000 kHz until subject could once again acknowledge sound. At that point the high frequency pitch was again increased until subject again indicated no sound. The high frequency pitch was moved in between the last 2 numbers until subject once again acknowledged pitch. The high frequency pitch range was then recorded.	
Results On average, a decrease in the ability to hear high frequency pitches began at 14,000 kHz for ages 8-30 and 8,000 kHz for ages 30+. On average a decrease in the ability to hear high frequency pitches began at 8,000 for BOTH genders.	
Conclusions/Discussion The following conclusions can be drawn from this experiment: The decrease in high frequency range diminishes significantly with age. On average a decrease in the ability to hear high frequency pitches began at 14,000 kHz for ages 8-30 and 8,000 kHz for ages 30+. There was no significant difference in high frequency range digression between either gender. Several things to keep in mind from this experiment are; even though MOST average age 30+ year olds cannot hear the high frequency ranges that some teenagers and young adults can, there are some exceptions...and one may just be the teacher in your class. That should be kept in mind should you choose to test this application in class when texting or phone conversations are not allowed. Some young children may not be able to communicate the pain that may accompany continued high frequency pitches-be aware! Last, but not least, next time you decide to loiter outside a store area, you may just be chased away, not by a policeman, but by the BUZZ AROUND TOWN.	
Summary Statement Finding out at what frequency range most people lose their ability to hear high frequency sounds.	
Help Received Mother for helping me purchase supplies, type and arrange board. Brother for helping me with graphs and charts.	