CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1223

Project Title
Magnitude of Vocal Ranges

Abstract

Objectives/Goals
The object of my project was to determine whether age and/or gender of a trained singer affects the range of notes they can sing clearly. If age and/or gender of a trained singer impacts the number of notes he/she can sing clearly, then adult females will be able to sing the largest spectrum of notes.

Methods/Materials
90 singers, (15 males and females in the ages of eight years old, Jr. High, and adult) were tested. On a piano or keyboard, play C4 (middle C) and have the singer repeat the note. Continue playing the white keys with a lower pitch until singer can't sing note clearly. This is the bottom of the singers vocal range. Return to C4 (middle C) and play the white keys with a higher pitch until the singer can't sing note clearly. This is the top of their vocal range. To find the magnitude of the singer#s range, count the number of notes in the singer#s vocal range.

Results
Increasing age appears to broaden vocal ranges within a gender, with the biggest variation in the female test subjects (an increase of five notes in each age range). Vocal ranges for male subjects seem to increase with age but level off after puberty (an increase of five notes between eight year olds and Jr. High students).

Conclusions/Discussion
In conclusion, age and gender of a trained singer do affect the magnitude of their vocal range.

Summary Statement
My project measures the magnitude of vocal range and the changes between various age groups and genders.

Help Received
Young Singers Club, Santa Barbara Choral Society, Santa Barbara's Childrens Choir, and Riverside Magnolia Baptist Church provided test subjects