# CALIFORNIA STATE SCIENCE FAIR
# 2008 PROJECT SUMMARY

**Name(s)**
Macy Yang

**Project Number**
**S1117**

**Project Title**
## The Sound of Music

**Abstract**

**Objectives/Goals**

The main objective of the experiment was to see which type of music (blues, classical, hip-hop, rap, and rock) would increase and decrease heart rate.

Hypothesis: If you were to listen to fast rhythm music, like rap, then your heart rate will increase.

**Methods/Materials**

1. Have volunteers rest for 20 minutes.
2. Ask the first volunteer to sit in the comfortable chair and relax.
3. Take the volunteer's pulse using a heart rate monitor, simply read the display and record the rate. Record in your notebook under the heading "No Music: Resting Heart Rate."
4. Place the headphones or earphones over the volunteer's ears, and play the first song you selected. Make sure the volume is comfortable and the same for all the songs.
5. Take the volunteer's pulse twice during the song: halfway through the song and right after the song ends. Record the two heart rates in your notebook.
6. Let the volunteer relax for 2 minutes before playing the next song.
7. Repeat the steps 4 through 6 for the rest of the songs.
8. Repeat the whole experiment with the rest of your volunteers.

The materials I used were 10 Volunteers, Comfortable Chair, Heart-Rate Monitor, Stopwatch, Headphones or Earphones, CD player or I pod or mp3, Pens and Pencils, Notebook, 1 Blues Song, 1 Classical Song, 1 Hip-Hop Song, 1 Rap Song, and 1 Rock Song.

**Results**

The results of this experiment show that listening to hip-hop and rap music causes your heart rate to increase ad listening to classical and blues decreases and/or steadies your heart rate. My results supported my hypothesis because the overall volunteers scored higher heart rates in fast rhythm music than in slow, steady music.

**Conclusions/Discussion**

Throughout this project, I found out that it is not the kind (style) of music but the pace (Is the beat fast or slow?), since sometimes classical can cause your heart rate to beat faster and sometimes rap can cause your heart rate to beat slower, it mostly depends on the pace of the song. So, when choosing songs for this project make sure to choose rap with fast rhythm beats and classical with slower beats.

**Summary Statement**

Basically, my project is on the different types of music affecting the heart rate, either by increasing or decreasing heart rate.

**Help Received**

Sister helped my cut my board's title; Brother loaned me his mp3; Biology Teacher helped me with my graphs; STAPLES and my mother helped me with the printing the work.