



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Bailey K. Autry	Project Number J0302
Project Title Which Non-Electrical Speaker Produces the Best All Around Sound?	
Abstract Objectives/Goals The purpose of this project was to figure out if the more holes a non-electrical speaker has, is better or worse. I said that if the speaker had 2 holes, compared to a speaker that had 4 holes, it would be the louder speaker. My hypothesis was correct. The 2 speakers I compared were both made of the same material and had the same size holes on all sides so, that means my independent variable was the amount of holes the speaker had. From conducting this experiment, I learned that when a non-electrical speaker has more holes it absorbs the sound more instead of making the sound project out louder. When I compared both the speakers to the original phone speaker both of the speakers to the original phone speaker both of the speakers were louder so it did make a difference in the sound. Methods/Materials Take the bamboo and cut it into 3, 8in pieces On 2 of the pieces of bamboo, cut a slot out that is big enough to fit your phone Put 1 of the slotted pieces of bamboo to the side, that is you first speaker To start the second speaker take the other slotted piece of bamboo and drill a hole straight through the side, so that it is perpendicular to the other tunnel going through the bamboo After that take the unslotted piece and cut it so that it will connect to the other bamboo piece and go straight through the holes you just made After that take the pieces and glue them as perfectly in line with the other holes as you can Test and compare the sound volume of both speakers by using a sound level meter Results The speaker with 2 holes was almost always louder than the one with 4 holes. The only time the speaker with 4 holes was louder was when a song was measured at 0 ft. When I was testing using hertz the speaker with 2 holes was always louder. Conclusions/Discussion The speaker with 2 holes was louder than the speaker with 4 holes overall. It seemed that when I tested with music and measured it up close the speaker with 4 holes was better than the one with 2 holes, but all the other points taken with music and with a steady sound showed that the speaker with 2 holes was better.	
Summary Statement My project was about comparing two non-electrical speaker designs to see if it change the volume of the sound.	
Help Received None	