



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Vikram A. Balaji</b>	<b>Project Number</b> <b>S1801</b>
<b>Project Title</b> <b>Resonance in Different Materials</b>	
<b>Abstract</b> <b>Objectives/Goals</b> To determine whether density has an affect on the resonant properties of a soundboard. <b>Methods/Materials</b> I obtained three different pieces of wood for use as a soundboard. I determined the density of all three pieces. A piece of wood was placed flat on two pieces of foam, and was kept in a silent room. A digital sound level meter was placed one-foot away from the sound board. The digital sound level meter was placed perpendicular to the grain of the wood. The amount of sound produced was measured in decibels, and there were seven trials conducted. <b>Results</b> The data showed that the sound board with the lowest density had produced the most amount of sound. It also showed that the other two pieces of wood, with varying densities as well, had produced similar amounts of sound. <b>Conclusions/Discussion</b> The data proves that there is a correlation between density and resonance, but it also shows a discrepancy. The similar sound produced by the two woods shows that there are other factors affecting the properties of a soundboard. The molecular structure of the wood and layering of cells might be a reason for similar sound. The amount of water in the wood might be another reason for the result.	
<b>Summary Statement</b> This experiment tested whether there was an affect on resonance for different densities of soundboards.	
<b>Help Received</b> Mother helped me assemble poster board, and conduct initial research.	