



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Dominic K. Olson</b>	<b>Project Number</b> <b>J0419</b>
<b>Project Title</b> <b>Music Training: Does It Affect Listening Skills?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This experiment explored the relationship between music lessons and listening skills, particularly pitch perception. The hypotheses were: If a subject has had music training, such as piano lessons or school band, then they are more likely to have better pitch perception. If a subject has had music training before age 9, then they are more likely to have better pitch perception. Pitch perception is important beyond music listening. It is also an important part of understanding speech and relates to other communication skills including reading.</p> <p><b>Methods/Materials</b> The subjects were 121 seventh grade students. Each student answered questions about their musical background and then completed a 17-question listening test. In the test, participants heard recorded tones and answered questions about what they heard. There were four types of listening tasks, in increasing difficulty levels.</p> <p><b>Results</b> The participants were sorted into four experience groups. The least experienced group had no music lessons and had not participated in school band or orchestra. The most experienced group were current music students and had started lessons before age 9. Higher levels of music training were statistically correlated to higher test scores on the listening test.</p> <p><b>Conclusions/Discussion</b> Subjects that had music training scored higher, and subjects who started music lessons before age nine did the best. This study did not examine the cause of the correlation. Music lessons could cause someone to have better pitch perception, or people with good pitch perception may be more likely to continue lessons. To study this, the test could be used to evaluate how student performance changes over time.</p>	
<b>Summary Statement</b> This experiment explored the relationship between music lessons and listening skills, particularly pitch perception.	
<b>Help Received</b> My science teacher allowed me to perform the experiment in her classes. My family served as test subjects when I was developing the test.	