



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Miriam L. Gershenson	Project Number J0312
Project Title Can Music Make You Smarter?	
Abstract Objectives/Goals I wanted to find how playing a musical instrument affects logic ability of middle school students. My hypothesis was that there would be a positive correlation between instrumental music experience and logic ability. Methods/Materials I obtained informed consent from 68 subjects in grades 6-8. Some subjects were tested in my science teacher's classroom during break; the rest were tested during their social studies classes. Subjects filled out a survey about instrumental music experience, then were given five minutes to complete short logic tests consisting of shape and number patterns. Subjects were not allowed to talk to each other while completing tests. I personally did all of the testing, to make sure that all subjects got the same instructions. Results The mean score for subjects that do not play an instrument, or are beginners (one instrument-year), is approximately 5.47. For subjects with two or more instrument-years, the mean score is 6.29. The difference between these is .82, or 8.2%. I did a z-test on the results, and found that they are statistically significant at the 5% level. Conclusions/Discussion My results partly supported my hypothesis. There was a large jump in score at two instrument-years, indicating that playing an instrument does increase logic ability. However, average score actually decreased slightly after two instrument-years, although the drop is not statistically significant. My research suggests that it is beneficial for students to learn to play an instrument, and music should be a required part of the curriculum.	
Summary Statement My project is about how instrumental music experience affects logic ability.	
Help Received Grandfather helped find idea; used two teachers' classrooms for testing; parents helped with Microsoft Excel; father and grandfather helped with statistics.	