



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

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<b>Project Title</b> <b>Concentration Experimentation</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective was to investigate if rock music affects the ability of adolescents to learn and perform mental tasks. If so, which form of learning is most affected by rock music? Is reading comprehension, problem solving, or memory affected the most, and is it in a beneficial or detrimental way? <b>Methods/Materials</b> Various tests including reading comprehension, problem solving, and memory were given to over 100 adolescents aging from 13 to 21 years old. Each type of test was given twice, once with music and once without music. The results were then compared to find the test type with the greatest average difference under the two conditions. <b>Results</b> When all students were included, the results on average were slightly worse with rock music for reading comprehension but enhanced for memory. Looking at gender as a subcategory, girls were strongly affected by rock music, with music impairing reading comprehension and problem solving while helping memory. Music was not found to have a significant impact on the results for boys. Another factor was whether or not students normally study with music. Music had a larger effect on those who normally study with music than those who normally study in silence. <b>Conclusions/Discussion</b> In general, the results suggest that rock music doesn't hurt mental activity much because the overall scores with music were not much lower than the overall scores without music. In fact, memory was enhanced by rock music. Surprisingly, the results were significantly different depending upon gender and study habits. Although the sample size (108 subjects) was fairly large and nearly fit a standard bell, some results were inconclusive because the uncertainties were large.	
<b>Summary Statement</b> Does rock music affect the ability of adolescents to learn and perform mental tasks?	
<b>Help Received</b> Used two teachers' classes to gather some of the data.	