



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Elizabeth P. Rose</b>	<b>Project Number</b> <b>S0419</b>
<b>Project Title</b> <b>Does a Compound Stimulus Improve Students' Memory?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Previous research showed that auditory and visual learning modes are the most effective among Villa Park High School students for memorizing information on a short term basis. A kinesthetic learning mode had proven less successful among the students tested last year. The purpose of this research was to determine the effect of a compound audio-visual stimulus on information retention over a longer (30-minute) interval as compared to the basic visual stimulus.</p> <p><b>Methods/Materials</b> A sample of students from VPHS was tested with two different stimuli, a basic visual stimulus, and a compound visual and auditory stimulus. Each student in the study was tested four times, twice with each stimulus. One classroom, predominantly of freshman students, received the visual stimulus first, and was asked to memorize a sequence of numbers. They were tested initially and again after 30 minutes to see how much of the information was retained. This classroom repeated the testing a week later with the combined audiovisual stimulus. In another classroom, mostly containing freshmen, students received the auditory and visual stimulus first, and were tested in the same way, with initial and delayed results. They repeated the testing a week later with only the visual stimulus.</p> <p><b>Results</b> When the four tests for each student were graded for accuracy, it was apparent that there was decay in the memory of the number sequence in the 30 minutes between the initial and delayed test, as would be expected. The results were consistent with my research from last year in that gender had no significant effect on the results. It was also found that the results were confounded in the second round of testing because the students learned how to take the test and improved their scores, whether it was on the visual or combined test, in the second round of testing. It was true, however, that when test scores from the two classrooms for the initial round of testing were compared, students had less memory decay of the number sequence with the audiovisual stimulus than with the visual stimulus.</p> <p><b>Conclusions/Discussion</b> Based on the findings, it can be inferred that combining visual and auditory learning styles can improve the retention of information. This has implications for classroom learning and study habits.</p>	
<b>Summary Statement</b> The project investigates whether a compound audio-visual stimulus is more effective than a basic visual stimulus for information retention over a 30 minute delay.	
<b>Help Received</b> Uncle helped with statistical analysis.	