



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Robyn N. Miles	Project Number J0325
Project Title Will Using Additional Stimuli to Reinforce Ten Words Enhance Short-Term Memory Recall?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to prove that using additional stimuli for reinforcement of word recall enhanced short-term memory. In my control group (test #1) I showed ten words to subjects who were within a specific age group. I showed the words one at a time for two seconds each. Subjects were given 30 seconds to recall and write down remembered words after all words were shown to them. I administered three other tests introducing additional stimuli to the control group test to determine if short-term memory recall could be improved.</p> <p>Methods/Materials Based on my research, I devised an experiment to learn whether people remembered more words if given test #1 - the control group, test #2 - ten words shown twice, test #3 - ten words shown once with complimentary pictures for reinforcement, test #4 - ten words shown while the words were said aloud to them. I used 40 different common nouns for my tests. I hypothesized results would be in order of most to least words remembered in the following order: Test #3, test #2, test #1, test #4.</p> <p>Results Some types of additional stimuli were helpful and resulted in more words remembered if it didn't interfere with the brain's primary sensory input of the word shown once. Test #2 - seeing the same word twice was most beneficial with an average of 61% of the possible words remembered. Test #3 - seeing a picture of the word was next with 59%. Test #1 - the control group of seeing the word once was third with 56%. Test #4 - seeing the word and hearing it at the same time actually detracted from memory recall ability with 51%.</p> <p>Conclusions/Discussion In an attempt to enhance short-term memory recall of ten words, using additional stimuli can either enhance or adversely affect ones ability to concentrate and recall words depending on the type of stimuli introduced. My experiment determined that the brain's complicated processes of short-term memory recall can be improved by introducing additional stimuli that reinforces memory recall. Additional stimuli, meant to improve recall, can be detrimental to the memory process if it causes confusion and loss of concentration during critical thought processes.</p>	
Summary Statement My project was designed to determine through testing of subjects if short-term memory can be enhanced by introducing additional stimuli to reinforce the memory process.	
Help Received In doing my project my mom took me to the library and bookstore so I could research my project. She also took me to various places so that I could conduct my experiments.	