



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Jenna S. Houle	Project Number J0714
Project Title Techniques to Help Kids Improve Their Memory, Lower Their Anxiety, and Improve Their Attitude about School	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine the difference in students ability to memorize a list of random words, lower their anxiety, and improve their attitudes about learning after 1.5 hours of instruction in a memory palace technique, an anchoring technique from Neuro-Linguistic Programming, and a presentation about brain science and growth and fixed mindsets.</p> <p>Methods/Materials This study was conducted using presentations and questionnaires created based on research on the techniques. Students were divided into control and experimental groups. Both groups received questionnaires, only the experimental group received training. For all three techniques, there was a pretest, training (experimental group) and a post test.</p> <p>Results T tests of the results showed that 25 min of mindset training had a statistically significant effect ($p = 0.0018$) on the participants# ability to view failure and learning in a way that promotes growth. A a single 15 minute session on anxiety training resulted in participants indicating a statistically significant lower level of anxiety ($p = .0011$). Although students expressed a strong interest in learning techniques to improve their memory in the pre-test questionnaire, the 25 min memory training did not result in a statistically significant improvement in students ability to recall a list of random words.</p> <p>Conclusions/Discussion 15 to 25 minute presentations developed specifically for a 7th grade audience were capable of creating a significant change in students ability to more positively view failure and learning as well as lower their anxiety related to tests and quizzes. The memory training did not result in significant improvement in students ability to memorize a list of random words.</p>	
Summary Statement This project investigated the effectiveness of techniques to help 7th grade STEM students improve their memory, manage and lower their anxiety, and improve their attitude about learning.	
Help Received I planned and designed the experiment myself but received general help from my teacher and father in understanding the statistics I used in the analysis.	