



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

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Project Title Do You Remember? A Phoneme-Based Structural Analysis of Word Recall	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my project was to analyze factors involved in the short-term memorization and recall of words. Specifically, I focused on proving a model for word recall I synthesized based on research and a study I conducted last year (Studying the Effects of Contextual Information on the Analysis of Words). This model describes the short-term memorization of words as follows: (1) The word is broken down into individual phonemes (sounds). (2) Factual and (3) emotional associations are made to the word. Though steps (2) and (3) have been proven through scientific research, the step (1) is a hypothesis I developed from observations of my pattern-recognition study of the reading process from last year; therefore, a second purpose of my project was proving this model for short-term word recall. Based on results from last year which indicated that phonemes (as opposed to just letters) were crucial in the reading process I hypothesized that phonemes would again be important in the short-term memorization process.</p> <p>Methods/Materials To evaluate my hypothesis, I created a series of 8 tests which I administered to 26 subjects. These tested a variety of variables, focusing on establishing a basis for word recall (phonemes or letters?) & pinpointing the location of the clue (beginning, middle, end) that would be most effective in increasing frequency of recall (FoR). The setup of these tests was to present a subject a list of 10 words for a minute and then have him or her recall the words with the help of certain clues (depending on the variable) or no clues at all (in the control).</p> <p>Results My data established phonemes as the basis of word recall because trials where phonemes were kept intact outperformed all others in terms of subjects# FoR (a 70% average increase from the control). I noticed that #beginning clues# (phonemes or letters) were most effective in increasing FoR. Lastly, in all non-phoneme trials (i.e. trials evaluating the effects of letter clues on the reading process), I noticed a strong link between the #novelty# of words (calculated by averaging the percentage chance of any letter being a given letter for all the letters of a word) and FoR.</p> <p>Conclusions/Discussion From my results, I concluded that my hypothesis was correct and my model of short-term word memorization and recall was valid. Most importantly, through my project, phonemes were established as a basis for the short-term memorization of words.</p>	
Summary Statement The purpose of my project was to analyze factors involved in the short-term memorization and recall of words.	
Help Received My mother help me coordinate testing subjects; my father helped my out with data analysis and critiqued my presentation.	