



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Craig J. Stieler	Project Number 34265
Project Title The Effect of Color in Relation to Recognition of Selected Scents	
Objectives/Goals This is an experiment designed to investigate the effect of color in relation to recognition of selected scents, based off of the Stroop Effect (Stroop, J.R.) 1935, and determined by the correspondence of #fruity# scents and their matching colors. Abstract Methods/Materials The experimental (n=10) and control groups (n=10) consisted of 16-18 year old, predominantly Caucasian male and female students, from a rural high school in central California. All of which were acquired through an opportunity sample. The experiment was carried out during two class periods, with one test, and one set of #fruity# scents. On the first test, the #fruity# scents corresponded to their colors (coconut-white, lemon-yellow, etc.). On the second, the #fruity# scents and their corresponding colors were mismatched (coconut-orange, raspberry-white). The independent variable was the participants# ability to identify culturally appropriate colors along with their corresponding scents when presented with incongruent colors and matching scents. The dependent variable was the accuracy of participants# correct recognition of the culturally appropriate scents with the culturally corresponding scents regardless of incongruence. Results A one-tailed t-test demonstrated that there was significance at the $p < 0.0025$ level, showing that sight and smell are distinguished together, as one, and both are heavily influenced by each other when it comes to the function of the brain. Conclusions/Discussion In conclusion, my calculated T value of approximately 3.5541 does meet and exceed the critical T-value of 1.734 at 18 degrees of freedom. Therefore, I may accept my hypothesis in that sight and smell are distinguished together in the brain, and are both heavily influenced by each other when it comes to the function of the brain. My hypothesis may be accepted due to the fact that the average number of correct answers given by participants presented with colored sponges that matches their corresponding colors (control group) was 3.2 out of 4; whereas the average number of correct answers given by participants presented with colored sponges that did not match their corresponding colors (experimental group) was 2 out of 4. I may also reject my null hypothesis.	
Summary Statement The Effect of Color in Relation to Recognition of Selected Scents	
Help Received Received help in learning how to use/operate Photoshop for the production of the poster board, and IB instructor help	