



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Randi N. Robertson	Project Number J1821
Project Title The Effects of Highlighting Solution on Hair	
Abstract Objectives/Goals By conducting this experiment I am trying to find the average strengths of five different colors of hair after being treated with the highlighting solution. These hairs include blonde, light brown, dark brown, black, and auburn hairs. All of which are natural non-treated hairs or virgin hairs. I chose this experiment for the reason being that I wanted to find out how much the highlighting process damage#s your hair. It is weakened since some of the molecules are removed and the keratins started to brake down which leads to the decrease in strength of the strands of hair. Methods/Materials To carry out my experiment I had to measure the hairs to find their original strength, then I treated them with the solution. Next, I had to measure the strands to find the results after being treated with the solution. The materials that I used included a 2.5 newton spring scale, 50-100 strands each of blonde, light brown, dark brown, auburn, and black hair. Also I used a perm bowl and brush, tape, foil, a sink, a towel, water, a timer, a camera, gloves, scissors, safety goggles, soap, one bottle of pure white 40 volume crème developer, and basic white powder bleach. Results After treating the strands of hair I calculated the average strengths of the treated hairs. The results are as follows: the blonde hair averaged 1.2 newtons, the light brown hair averaged 1.6 newtons, the dark brown hair averaged 1.3 newtons, the black hair averaged 1.8 newtons, and the auburn hair averaged 1.4 newtons. Conclusions/Discussion After conducting and completing my experiment I found that my hypothesis was correct. The blonde hair was the weakest and it averaged 1.2 newtons. The black hair was the strongest and it averaged 1.8 newtons. As the results confirm the blonde hair was the weakest and the black hair was the strongest out of all five colors of hair.	
Summary Statement Finding the affects of the highlighting solution on various colors of hair.	
Help Received Transportation provided by parents to acumulate supplies and equipment.	