



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) D. Marel Dugan	Project Number J0512
Project Title Chemically Altering Hair Could Make It Tear	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project was to test if dying hair effects its strength. Thousands of people dye their hair each day and have no idea what damage that they are causing by altering the color of their hair using chemicals. By dying your hair many risks follow. You can damage your hair, and recently there have been tests done to find if dying your hair can give you blood cancer. This shows how important it is that the public is aware of these dangers.</p> <p>Methods/Materials I tested this by hooking a plastic bag with a paper clip to the hair while the hair is connected to a piece of wood using duck tape, then placing mass in the bag until the hair broke. I completed 50 trials for the dyed hair and 50 trials for the un-dyed hair.</p> <p>Results After completing 100 trials, I came to the conclusion that dying hair effects its strength. It causes the hair to become weaker. The average weight held by the dyed hair was 39.7 grams, and 44.4 grams for the un-dyed hair.</p> <p>Conclusions/Discussion After concluding my test I proved my hypothesis to be correct. There was a total of one outlier out of all the data. The project was very controlled and had an obvious conclusion.</p>	
Summary Statement My project tested if dying hair effects its strength	
Help Received My teacher helped me create my project design.	