



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Miranda D. Fang	Project Number J0405
Project Title A Leaf's True Color	
Abstract Objectives/Goals The goal of this project is to investigate whether the pigments in leaves that produced their autumn color are present while the leaves were still green. Methods/Materials To carry out my project, paper chromatography was used. Using this technique, the pigments in the leaves would travel up the chromatography paper ceasing at different heights. Different colors of leaves from a red maple and a dogwood trees were collected. Leaves were placed into jars after crushing and grinding them well. By soaking it in 70% isopropyl alcohol it lets pigments dissolve into the solvent. A strip of chromatography paper were then placed into each jar, letting the solvent rise. This experimental procedure was repeated five times for each type and each color of leaves. Results Once the solvent front reaches to a certain height, several leaf's pigment bands were visible and heights were recorded accordingly. Different bands were seen at various heights, but some bands were found at the same height for each type of color of leaf, which were green, yellow and red. Conclusions/Discussion Different color bands were seen and different shades were visible. But because the bands of the same shade of color stopped at the same distance, one can conclude that it is the same pigment that showed up on the chromatography strips. For example, a dull vibrant yellow band at a height ratio relative to the solvent front of 0.30 appeared on all green, yellow, and red of red maple leaves. Therefore, the pigment that produced the leaves' yellow and red colors exists in the green leaves before it changes color.	
Summary Statement The pigment that produces the leaves' yellow and red colors exist in the green leaves before it changes color.	
Help Received Chromatography paper was donated by the science lab in Colina Middle School.	