



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Aashrita Mangu	Project Number J1616
Project Title C MY Kolor?	
Abstract Objectives/Goals The purpose of this project was to find how colors, represented by a CMYK (Cyan-Magenta-Yellow-Black) model, reflected light. The main goal was to organize the data into a useful chart showing the range of reflectivity of different colors from least to greatest. Methods/Materials This was achieved by building a black box apparatus and using a light meter to measure the amount of light reflected from various color swatches, which were then recorded. The color swatches were created by using a CMYK based color Laser Printer. There were a total of five trials. Results The tests showed that lighter and brighter colors reflect more than darker and duller colors. They also showed that pastel, or soft, colors are the most reflective. In general, low levels of pigmentation had higher levels of reflectivity. However there were exceptions, such as the Yellows and Cyans. They seemed qualitatively opposite to Magenta and Black; while Cyan and Yellow got more reflective at higher pigmentations levels, Cyan and Yellow behaved conversely. Conclusions/Discussion The data chart showing the results can be applied to day-to-day life in many ways. Colors play a surprisingly large role in people's life- from picking cars to painting houses. It is important to make the correct choice of color according to a region's climate because reflectivity (and absorption) of light, and ultimately heat, affect the amount of air conditioning one uses. This, then, directly influences the carbon footprint of the object or person. The scope of this experiment was limited to recording reflectivity of 63 colors representing a cross section of the CMYK spectrum. To make this more comprehensive, the complete Pantone(R) CMYK palette needs should be analyzed.	
Summary Statement The purpose of this project was to find how colors, represented by a CMYK (Cyan-Magenta-Yellow-Black) model, reflect light.	
Help Received Mom and Dad proofread work and helped buy necessary materials; Dad also helped in the woodworking to build blackbox.	