CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J1122

Project Title
The Effects of Glass and Plastic Protective Covers on Paper Fading

Abstract

Objectives/Goals
The goal of this project is to measure the effect of glass and plastic covers on the amount of fading of paper exposed to sunlight.

Methods/Materials
The project was done by exposing 4 identical pieces of black construction paper to sunlight for 12 days. Each was either uncovered or covered with a different type of glass or plastic: window glass, museum glass, acryllic plastic, uncovered. The four samples, plus an unexposed control sample, were photographed with a digital camera. The amount of fading was found by measuring the brightness of the digital picture in both RGB and CYMB color scales using Photoshop.

Results
I found that the paper protected by museum glass faded the worst, window glass was second worst, acryllic plastic did second best, and the unprotected paper faded the least. On the CYMB scale, the black faded the most, followed by cyan and magenta (nearly the same) and then yellow, which faded very little.

Conclusions/Discussion
I conclude that using glass or plastic covers to protect construction paper exposed to sunlight from fading is not useful. This is unexpected since I thought that the covers would absorb some ultraviolet light, which I thought caused fading.

Summary Statement
The project measured how different plastic and glass coverings affected the amount of fading when paper was exposed to sunlight.

Help Received
My mother helped with the idea and my father helped me with using Adobe Photoshop to measure the picture's brightness.