



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Christopher Battaglia; Ryan Jacobs	Project Number J1104
Project Title Photography: Finding the Perfect Exposure	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our objective was to find out how to produce the "perfect photograph" by discovering how different optical densities, lighting, and film speeds affect a black and white print's exposure value.</p> <p>Methods/Materials We took pictures with 400 and 100 speed film and shot into different light sources- Florescent and 100 watt bulb-while placing densities-plexiglass, glass and fiberglass- over the lens. We designed and built our own densitometer, a contraption which shines light through negatives to determine its exposure value from a light meter.</p> <p>Results We found, that 100 speed film was 6% closer to being perfectly exposed (balance of dark and light) than pictures taken with 400 speed, making it the best choice. Glass was the best medium to shoot with 100 speed film, and plexiglass was best for 400 speed. We found Fluorescent lighting takes better pictures than the 100 watt bulb because the average of the prints was 2% closer to perfect exposure.</p> <p>Conclusions/Discussion A combination of 100 speed film taken with glass and a Fluorescent light produces an optimum print. Our results definately enabled us to obtain our objective of finding the conditions to produce the "perfect photograph." A combination of 100 speed film taken with glass and a Fluorescent light produces an optimum print. These results can be used in many situations photographers encounter in the future. They can be used when determining which film speed and lighting to use in studio/home settings, and deciding which filters to apply for the appropriate situations. We believe that photography manufacturers should experiment with plexiglass filters instead of glass.</p>	
Summary Statement Our project is about finding how optical density, film speed, and lighting affect a black and white prints exposure.	
Help Received Kevin Fitzgerald lent us his manual light meter for the testing with our denitometer.	