



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Colin B. Ries	Project Number J1625
Project Title Temperature vs. Refraction	
Abstract Objectives/Goals The objective is to determine if the temperature of water affects the refraction of red laser light. Methods/Materials A laser pointer and a ruler taped to the bottom of a tall thin tank were used to measure the refraction angle of red light in water. Measurements were taken every 5° C water temperature from 20° C to 65° C. The Refractive Index was calculated by dividing the sine of the incident angle in radians by the sine of the refractive angle in radians. Results As the temperature of water increased the refractive index decreased. The mean index at 20° C was 1.3860 and the mean index at 65° C was 1.3438. The regression line through the data had an r2 of 0.995. Conclusions/Discussion I found that the temperature of water does affect the refractive index of red laser light.	
Summary Statement This project tested the effect of temperature on the refraction of red laser light from air to water.	
Help Received Mom helped assemble the board. Dad helped with typing and calculations.	