



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Lee C. Rubinoff	Project Number J0334
Project Title The Magic Eye	
Abstract Objectives/Goals The objective is to determine if nearsighted and farsighted people perceive hidden 3-D images differently. Methods/Materials Informed consent was obtained from 78 people. The subjects were asked as to which "vision category" they belonged, i.e., nearsighted, farsighted, or "20/20" vision. Colorblind subjects were ruled out by using standard dotting tests. Subjects were shown a simple hidden 3-D image from the "Magic Eye" image book. If able to see the hidden image, they were asked if they perceived the image as being concave or convex. Three additional images of increasing difficulty were presented to the subjects. Subjects being able to perceive 50 percent or more of the images were scored as being able to "view" the hidden 3-D images. Those subjects perceiving less than 50 percent of the 3-D images were scored as not being able to "view" the hidden 3-D images. Each vision category was analyzed as to the number and percentage of subjects viewing the 3-D images as being concave, convex or not perceived. Results A total of 78 people were tested. Of these, 31 subjects were nearsighted, 19 were farsighted, and 26 had "20/20" vision. Two subjects were colorblind and excluded from this study. Of the 31 nearsighted subjects, 25 subjects (80.65 percent) viewed the image as being convex; and six (19.35 percent) did not see the image. Of the 19 farsighted subjects, 15 subjects (78.95 percent) viewed the image as being concave; one (5.26 percent) saw the image as convex; and three (15.79 percent) did not see the image. Of the 26 "20/20" subjects, 24 subjects (92.31 percent) viewed the image as being convex; and two (7.69 percent) did not see the image. Conclusions/Discussion From this study with a limited number of subjects, it appears that nearsighted people and those with "20/20" tend to view 3-D images as being convex. Farsighted people tend to view the images concave.	
Summary Statement This project is to find out if farsighted people and nearsighted people view 3-D images differently.	
Help Received Optometrist gave me information on eye anatomy, Father helped edit report, Science teacher provided guidelines, Mother proof read report.	