



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Sona N. Shah	Project Number J1536
Project Title The Twists and Turns of Light	
Abstract Objectives/Goals My goal was to learn whether the density of a liquid medium would affect the way it refracts light. I thought that the density of a liquid medium would affect the way it refracts light because the closer the molecules are (denser), there will be more collisions. This means that light will have more molecules to bounce off of, causing light rays to bend. Methods/Materials First, make a small lighthouse with six slits out of construction paper and then, in the dark, one by one place each of the liquids (water, water with two teaspoons of salt, water with two teaspoons of glucose, club soda, syrup, Sprite, vinegar, Canola oil, and an empty cup) 3 inches away from the house, turn on the light, and record the distance between the focal point and cup. Results I did my experiment five times. Water had a distance of two inches between the focal point and the cup, water w/ salt-1.6in., water w/ glucose-1.7in., Club Soda-1.9in., syrup-.4in., Sprite-1.7in., vinegar-1.8in., every time. Except Canola oil had a .9 inch distance the second time, and a .8 inch distance the other four times. Conclusions/Discussion My hypothesis was correct. The density of a liquid medium would affect the way it refracts light. In my experiment, I found that as I tested denser liquids, the refraction increased and the focal point came closer to the cup. So, as density increased, refraction does, too. In this experiment, I learned that refraction is affected by the density of liquid medium. I also learned how the principle of refraction is used to correct human eyesight.	
Summary Statement My project is about whether the density of a liquid medium affects the way it refracts light.	
Help Received Mother helped me collect my materials and my Dad helped me when I had any unanswered questions.	