



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Hayley Smith (Wade)	Project Number 22491
Project Title Light Refraction	
Objectives/Goals Can the refraction of light be used to identify materials? Abstract Methods/Materials Using a laser and polar projection paper, I shot the light beam through the medium and calculated the refraction index of the material to identify them. Results It is possible to identify materials using Snell's Law and light refraction. Each material has a different index of refraction. For instance, in ethyl alcohol the refraction index for 45 degrees is 1.305, and for crown glass it's 1.52. It does not make a difference whether the medium is solid or liquid, as long as the substance is thin enough for light to travel through. Conclusions/Discussion My hypothesis was correct, because it is possible to identify materials using refraction. This process will help for many different areas and problems. For instance, identifying unknown substances in labs, and in geology to identify what minerals are in a piece of rock.	
Summary Statement Identifying liquid and solid substances by their index refraction	
Help Received Mr. Bob Lewy - was my mentor throughout the experiment and let me use the materials in his lab where he worked.	