CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
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Project Number
34091

Project Title
Speed of Light

Abstract

Objectives/Goals
One goal of this project was to determine if the speed of light changes in different media. Also, if it did change to see if there are any noticeable connections between light speeds and the media they traveled in.

Methods/Materials
The materials used were: one glass container, a laser, oil, gelatin, maple syrup, water, shampoo, graph paper, protractor, ruler, calculator, and a pencil. First,the glass container with the tested media in it were put on a specific place on the graph paper on one of two perpendicular lines drawn. A laser was pointed at the container and a point was marked where the light left the container on the graph paper. Then a line was made using the point and connected to the intersection of the perpendicular lines. Using the angle made between this line and the perpendicular lines, as well as the Snell's Law Equation, the refractive index was found. Using the refractive index and the speed of light in a vacuum the speed of light in the tested media was found.

Results
The results showed that water had the fastest speed, 230 843 279.6 m/s, followed by oil and gelatin, 224 604 358.1 m/s, maple syrup, 211 365 977.7 m/s, and lastly shampoo, 172 393 850.9 m/s.

Conclusions/Discussion
From this project, it is concluded that the speed of light will change. Based on the order of light speeds, the hypothesis was proven to be correct. Lastly, it is concluded that the speed of light in a vacuum will be slowed down the most in denser media.

Summary Statement
This project is about measuring the speed of light in different media.

Help Received
I received no help doing this project.