Name(s)	Project Number
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	35119

Project Title

Refraction and the Speed of Light

Abstract

Objectives/Goals
The purpose of my project is to find out how fast light travels through different mediums.

Methods/Materials
Materials
5 Sheets of Paper; Pen; Ruler; Printer; Printable Radian Protractors; Scientific Calculator; Laser Pointer; 5 Square Plastic Containers; 200mL of Distilled Water ;200mL of Cooking Oil; 200mL of Dish Soap; 200mL of Surface Cleaner.

Procedure
1. Print out five radian protractors.
2. Fill the plastic container with 200mL of the test medium.
3. Fold a printed protractor in half.
4. Put a test medium on the center of the protractor.
5. Using the pen, make a dot about 4 centimeters from the fold on the paper of the protractor.
6. Put the laser down, and aim it at the dot. Aim the laser so it goes over the dot and enters the test medium at the fold on the protractor.
7. Using the pen, mark where the laser enters and exits the test medium.
8. Using the protractor, measure the angle of incidence and the angle of angle of refraction.
9. Use Snell's law to calculate the speed of light in the air and in the test material.
10. Repeat steps 2-8 with the different test medium.

Results

Test Medium	Density (g/ml)	Speed of Light in Medium (m/s)	Weight in Grams	Angle of Refraction
Control	0	287,422,713	0	0.85
Surface Cleaner	0.8230	304,410,967	164.6	0.92
Distilled Water	0.8535	308,964,122	170.7	0.94
Cooking Oil	0.8975	302,076,996	175.5	0.91
Dishwashing Liquid	0.9170	306,706,675	183.4	0.93

Conclusions/Discussion

Summary Statement
My project is about finding out how light speed is affected as it travels through fluids with different densities.

Help Received
My parents bought materials for the project.