

Learning Objectives

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Understandings

- Models in science help us explain and predict behaviors
 - Laws describe behavior
- Environment impacts some behaviors/characteristics while other behaviors and characteristics remain constant independent of the environment
- Some properties are independent of environment and some properties are dependent on environment

Skills/Cognitive Processes

- Students should be able to draw/identify the reflected ray given the refracted ray.
- Students should be able to use the equation $\theta_i = \theta_r$
- Students should be able to predict the path of a light ray when traveling through media of different indices of refraction using Snell's Law.
- Students to use Snell's law to empirically determine the index of refraction of an unknown material.
- Students should be able to calculate use the definition of the index of refraction $n = c/v$ to determine

Knowledge

- Students should know that light travels at the speed c in a vacuum and slower than c in all other medium which transmit light. (catch and throw analogy)
- Students should know that change in speed causes a light ray to bend towards the normal in a more optically dense medium and away in a less optically dense medium.
- Students should recognize that the frequency of light remains constant while the wavelength and speed change as light travels in different media. (toll booth analogy)