

## 33.5: Analysis

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1. Based on your attempt to spear the penny, how should you aim if you are viewing an object that is in water while you are standing in air viewing and the object from an angle?
2. In general, does a small angle or a large angle alter the path of light more? What was your evidence?
3. Sketch a light ray that travels from the penny through water and is transmitted through the side of the beaker, and travels toward you some distance away. Start your line (light ray) from the penny to the side of the beaker, then continue your line from the side of the beaker through air; show how the light changes direction at the water/air boundary. Use your sketch to explain why the penny may disappear as you walk backwards.
4. Use your data from the Laser Refraction Tank to describe, in general, how changes in angle affect the refraction of light.

### Contributors and Attributions

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