

Objective:

To experimentally determine the index of refraction of a piece of glass

Materials:

- rectangular piece of glass
- three thumbtacks
- protractor
- cardboard

Procedure:

1. Place a piece of paper on top of the cardboard.
2. Place the piece of glass onto the center of the piece of paper, and trace the outline.
3. Press one of the thumbtacks into the piece of paper, roughly 1.0 cm from the bottom left corner of the piece of glass.
4. Press the second thumbtack into the piece of paper, roughly 1.0 cm from the top right corner of the piece of glass.
5. Look along the line from the first thumbtack to the second through the glass, and place a third thumbtack so that all three thumbtacks are lined up when looking along the line.
6. Remove the glass (be sure to have traced it!), and draw a line between the first and second thumbtacks (the line of incidence), and the first and third thumbtacks (the line of reflection).
7. Draw a line perpendicular to the glass through the first thumbtack. This will be your normal line. Measure the angle between the line of incidence and the normal line, and the angle between the line of reflection and the normal line.



Angle of Incidence = _____

Angle of Refraction = _____

questions continued on next page

Unit 6M_Determining the Index of Refraction of Glass Lab

Procedure:

8. Use Snell's Law to determine the index of refraction of the glass. You can assume the index of refraction of air to be nearly 1.00.

Questions to consider:

1. Draw a diagram if the glass had a higher index of refraction.