

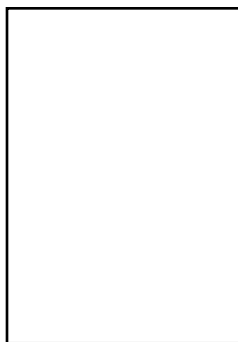
In this activity, you will experimentally determine the index of refraction of a piece of glass.

Materials:

- rectangular piece of glass
- thumbtacks (3)
- protractor
- cardboard

Procedure:

1. Place a piece of paper on top of the cardboard.
2. Place the piece of glass onto the piece of paper, and trace its outline.
3. Press one of the thumbtacks into the paper at roughly 1 cm from the bottom left corner of the piece of glass.
4. Press the second thumbtack into the paper at roughly 1 cm from the top right corner of the piece of glass.
5. Look through the glass along the line from the first thumbtack to the second thumbtack, and press a third thumbtack into the paper so that all three thumbtacks appear to be lined up.
6. Remove the glass, and draw a line on the paper between the first and second thumbtacks (line of incidence), and the first and third thumbtacks (line of reflection).
7. From top to bottom of the paper, draw a line that is perpendicular to the outline of the mirror and connects to the first thumbtack. This is your normal line. Measure the angles between the line of incidence and the normal line, and between the line of reflection and the normal line.



angle of incidence = _____

angle of refraction = _____

Procedure:

8. Use Snell's law to determine the index of refraction of glass, assuming 1 to be the index of refraction of air.

Questions to consider:

1. Draw a diagram with a higher index of refraction for glass.