DATE: NAME: CLASS:

CHAPTER 7
SCIENCE INQUIRY

BLM 7-14

Refraction: Light Changes Direction

Goal • Use this page to review how light bends when it travels from one material to another.

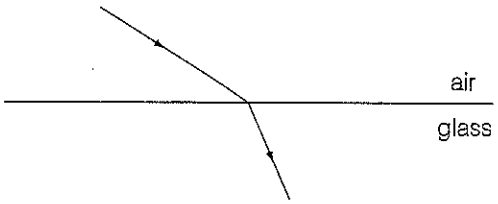
Introduction

- When light moves from one medium (such as air) to another (such as water), the light bends. This is called refraction. The light bends because it changes speed when it moves between materials that have different densities. The diagrams below illustrate refraction. For example, in A, the light ray travelled through the air and entered glass. In B, the light ray travelled up from water and entered the air.

What to Do

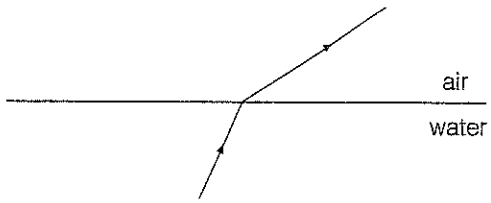
- For each diagram, draw the normal at the point of contact. Measure the incident angle and the angle of refraction. Then complete the sentences.

(a) Air to glass



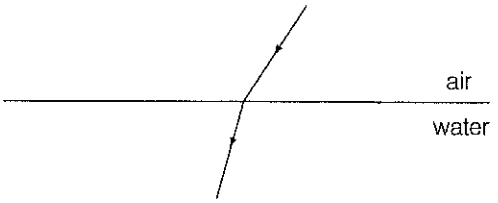
The angle in air is _____ than the angle in the glass. *(greater or less)*
The light entering the glass bends _____ the normal. *(toward or away from)*

(b) Water to air



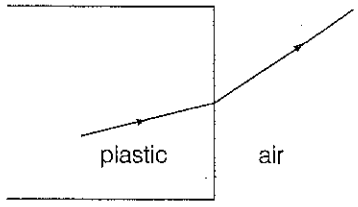
The angle in air is _____ than the angle in the water. *(greater or less)*
The light entering the air bends _____ the normal. *(toward or away from)*

(c) Air to water



The angle in air is _____ than the angle in the water. *(greater or less)*
The light entering the water bends _____ the normal. *(toward or away from)*

(d) Transparent plastic to air



The angle in air is _____ than the angle in the plastic. *(greater or less)*
The light entering the air bends _____ the normal. *(toward or away from)*

Refraction: Light Changes Direction (continued)

(e) When light refracts, the angle in the air is always _____ the angle in the other substance. Light entering the other substances bends _____ the normal. Light leaving a substance and entering the air bends _____ the normal. (*greater than, less than, toward, away from*) If necessary, you may use a word more than once.

Believe It or Not?