

### Light Refraction

Read from **Lesson 1** of the **Refraction and Lenses** chapter at **The Physics Classroom**:

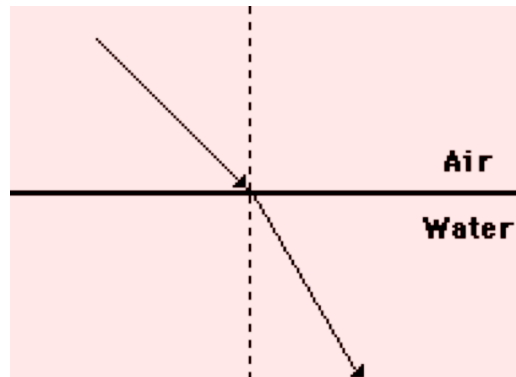
- <http://www.physicsclassroom.com/Class/refrn/u1411a.html>
- <http://www.physicsclassroom.com/Class/refrn/u1411b.html>
- <http://www.physicsclassroom.com/Class/refrn/u1411c.html>
- <http://www.physicsclassroom.com/Class/refrn/u1411f.html>

**MOP Connection:** Refraction and Lenses: sublevels 1 and 2

1. Write a one-word synonym for **refraction**. \_\_\_\_\_
2. Refraction occurs when light crosses the boundary between one material and another material. What is the primary cause for this refracting of light upon crossing a boundary?

The diagram below shows the path of a light ray as it travels through air, across the air-water boundary, and through the water. Use the diagram to answer questions #3-#6.

3. On the diagram, label ...
  - the air-water boundary with a **B**
  - the normal line with an **N**
  - the incident ray with an **I**
  - the refracted ray with an **R**
  - the angle of incidence with a  $\theta_i$
  - the angle of refraction with a  $\theta_r$
4. How many media are there in this diagram? \_\_\_\_\_  
Name them.



5. What is meant by the term "medium" in this context?
6. Place a noticeable dot at the location where refraction of light takes place.

7. For the three situations below, draw a normal line and measure and record the angles of incidence and the angles of refraction.

$\theta_i =$ _____	$\theta_i =$ _____	$\theta_i =$ _____
$\theta_r =$ _____	$\theta_r =$ _____	$\theta_r =$ _____

8. As light passes from one medium into another, it refracts. There is only one condition in which light will cross a boundary but not refract. State this condition.