

Information to memorize – refraction

Refraction is caused by changes in the speed of light as it passes from one material to another.

When light rays enter a material in which their speed decreases, the rays bend toward the normal.

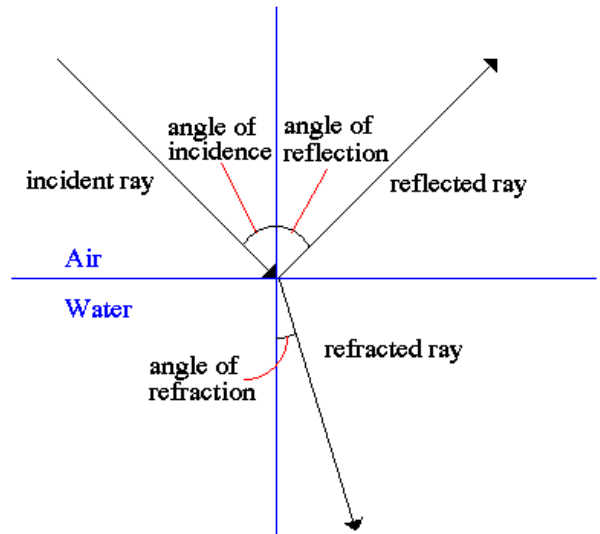
When light rays enter a material in which their speed increases, the rays bend away from normal.

The larger the angle of incidence, the larger the angle of refraction.

The more the change in speed, the more the light beam changes direction.

The angle of incidence and angle of refraction are both measured from the normal

Reflection and Refraction



Light travels as fast as it can possibly go in air. This speed is 300 million m/s, and is labeled c .

The index of refraction n is defined as $n = \frac{c}{v}$, where c is the speed of light in air, and v is the speed of light in a material.

The bigger a material's index of refraction, the slower light moves in that material.

[The tables below are for use on homework, and will be given on tests – do not copy or memorize them.]

Air	1.00
Corn oil	1.47
Diamond	2.42
Ethyl alcohol	1.36
Glass, crown	1.52
Glass, flint	1.66

Glycerol	1.47
Lucite	1.50
Quartz, fused	1.46
Sodium chloride	1.54
Water	1.33
Zircon	1.92