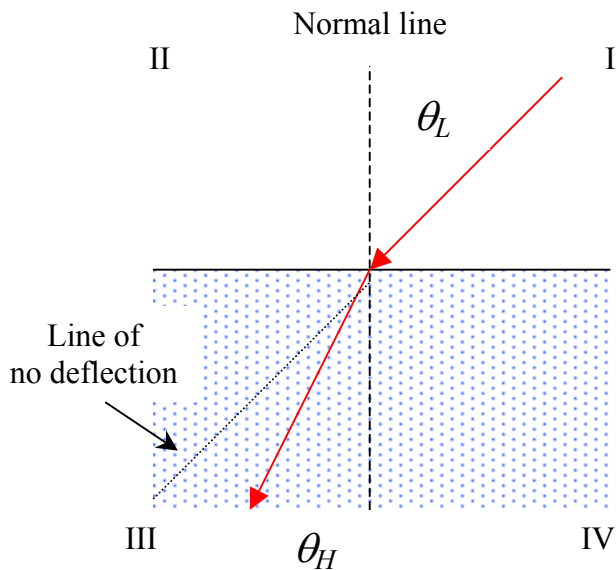




Workshop Physical Science

Refraction Summary



Whenever light passes from a (L)ight material to a (H)eavier material, part of the light is reflected (not shown) and part transmitted.

Light refraction is governed by Snell's Law of Refraction:
 $n_L \sin \theta_L = n_H \sin \theta_H$

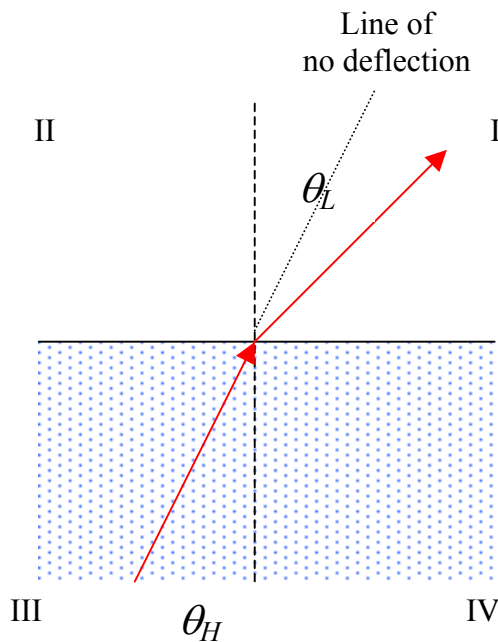
Refracted light passes from I \rightarrow III or II \rightarrow IV (truck analogy users: light does not bounce off the normal line)

Notes:

The light ray bends *toward* the normal line.

The refracted ray lies between the line of no deflection and the normal line.

$$\theta_L \geq \theta_H \quad (\theta_L = \theta_H = 0)$$



Whenever light passes from a (H)eavy material to a (L)ighter material two possibilities exist. If the incident angle is less than the critical angle, part of the light is reflected (not shown) and part transmitted; otherwise, all the light is reflected.

Light refraction is governed by Snell's Law of Refraction:
 $n_L \sin \theta_L = n_H \sin \theta_H$

Refracted light passes from III \rightarrow I or IV \rightarrow II.

Notes:

The light ray bends *away* from the normal line.

The refracted ray lies between the line of no deflection and the boundary line.

$$\theta_L \geq \theta_H \quad (\theta_L = \theta_H = 0)$$