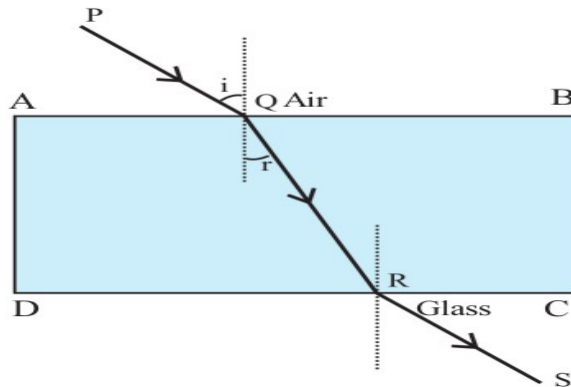


# Physics Class Notes

## Refraction in Different Media

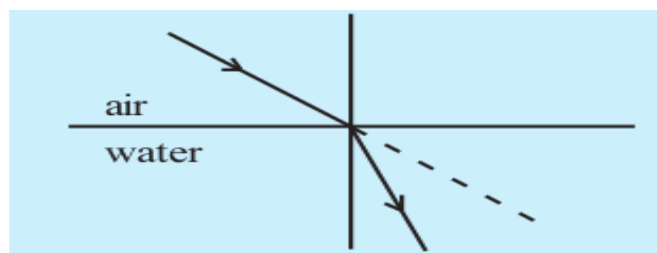
The below figure shows a light ray is allowed to pass from Air to Glass and then from Glass to Air.



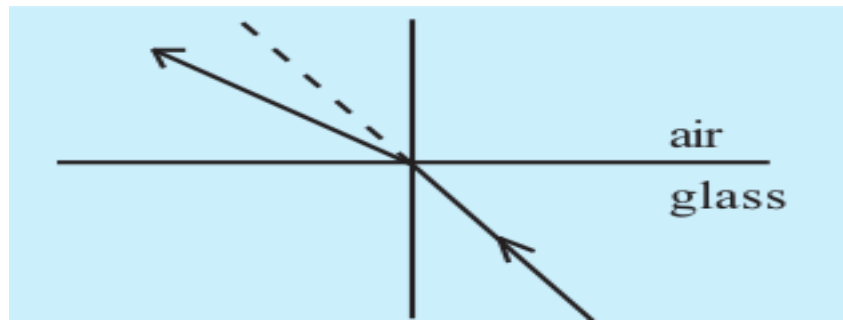
PQ is the incident ray at the surface of separation AB.

- Which is the incident ray on the surface of separation CD?  
**Ans: QR**
- The angle between the incident ray and the normal is called the angle of incidence. If so, can you explain what is angle of refraction?  
**Ans: The angle between normal and the refracted ray is called the angle of refraction.**
- Is the angle of refraction greater or lower than the angle of incidence when it goes from air to glass?  
**Ans: Lower**
- What about from glass to air?  
**Ans: Greater.**
- Which is of greater optical density – air or glass?  
**Ans: Glass**
- While going from air to glass, the refracted ray deviates towards the normal/ deviates away from the normal?  
**Ans: The refracted ray deviates towards the normal.**
- What happens while it goes from glass to air?  
**Ans: Deviates away from the normal.**
- Are the angle of incidence, angle of refraction and the normal at the point of incidence on the same plane?  
**Ans: Yes.**

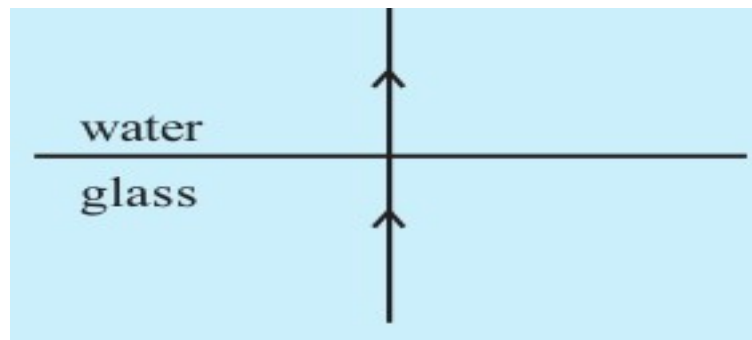
1. While entering from a medium of lower optical density to that of greater one, the refracted ray deviates towards the normal.



2. While entering from a medium of greater optical density to that of lower one, the refracted ray deviates away the normal.



3. No deviation takes place in the case of a light ray falling normally on a medium.



### Laws of Refraction

- The angle of incidence, the angle of refraction and the normal at the point of incidence on the surface of separation of the two media will always be in the same plane.
- The ratio of the sine of the angle of incidence to the sine of the angle of refraction ( $\sin i / \sin r$ ) will be always be a constant. This is known as Snell's Law.

The constant from Snell's law is known as **refractive index (n)**.

That is  $n = \sin i / \sin r$