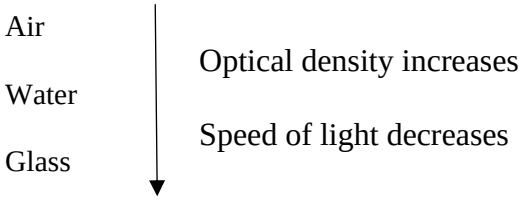
Refraction of Light

- Optical density of a medium is a property of the medium that tells how fast light travels through the medium.

- The higher the optical density, the lower the speed of light.

- You should remember how the optical densities of air, water and glass compare. This would help you remember how the speed of light differs between these media.



- When light goes from one medium to another medium its speed changes due to the change in optical density.

- When light enters a new medium, if it slows down, it bends towards the normal. If light speeds up, it bends away from the normal. This means, when light goes from a low optical density medium to a high optical density medium it bends towards the normal. When going from a high optical density medium to a low optical density medium light bends away from the normal.

Total Internal Reflection

- Total internal reflection happens only if both of the following conditions are met.

  Condition 1:

  Light should go from a high optical density medium to a low optical density medium

  Condition 2:

  The angle of incidence in the high optical density medium should be greater than the critical angle.

- The value of the critical angle depends on the two media that are involved.