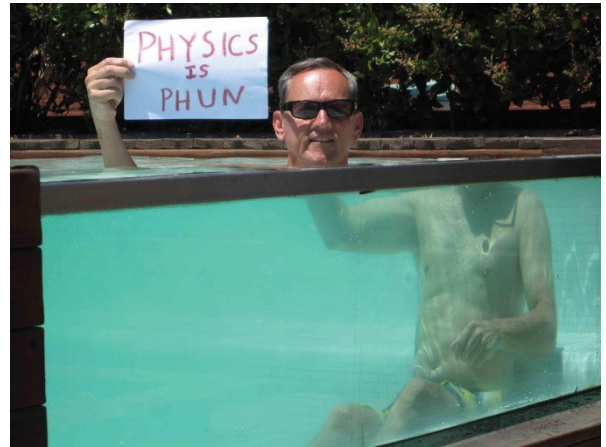


REFRACTING LIGHT – RAYS IN DIFFERENT SUBSTANCES

Why do objects underwater appear to be in a different place than what we see from the surface?

Mirrors **reflect** light. Lenses **refract** light.

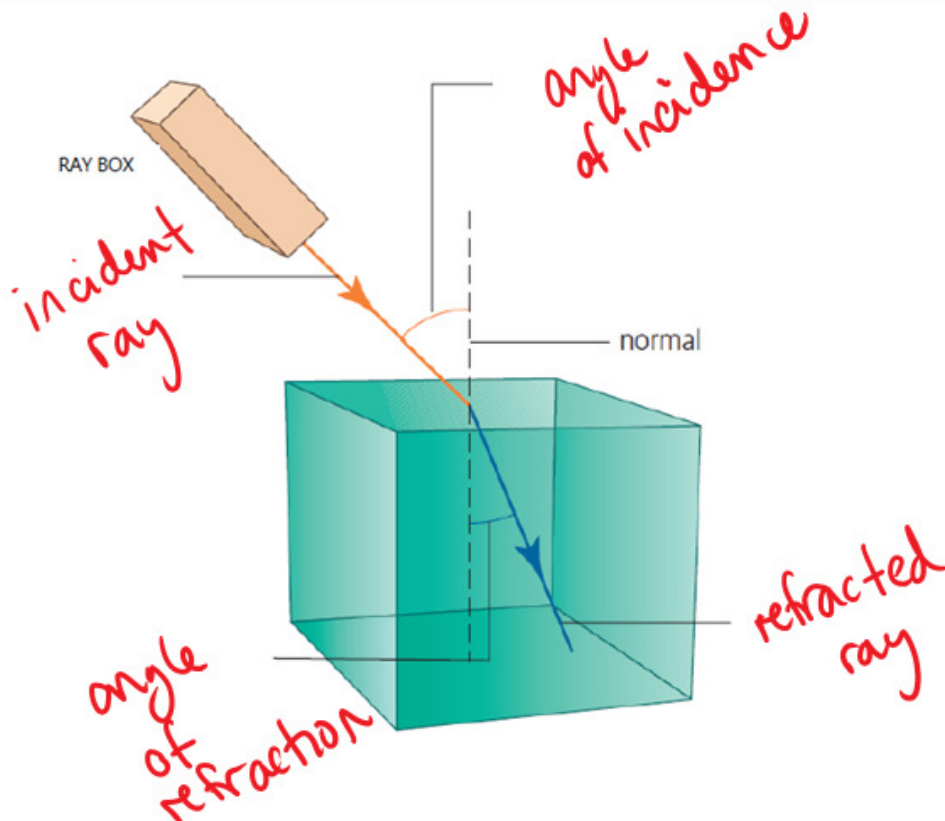


Refraction
light bends as it travels from one medium to another

Incident Ray
the original ray of light.

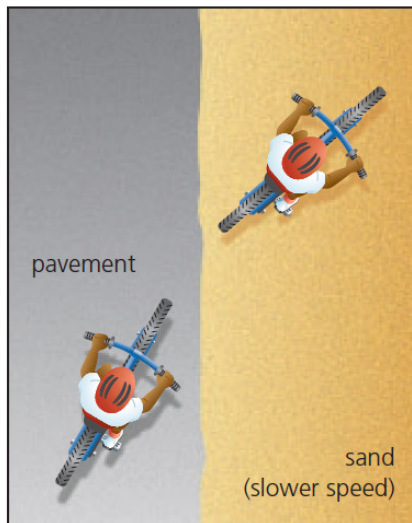
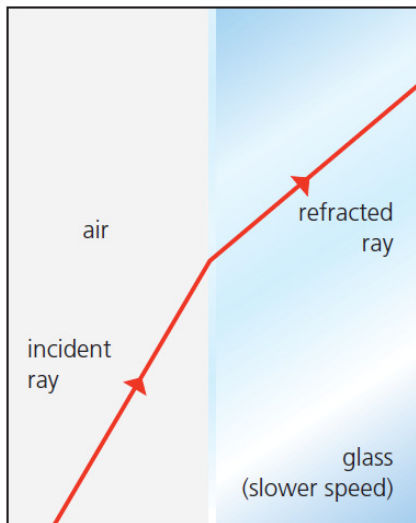
Refracted Ray
the ray of light that changes direction

Complete the diagram below with the above terms as well as: **angle of incidence**, **angle of refraction**

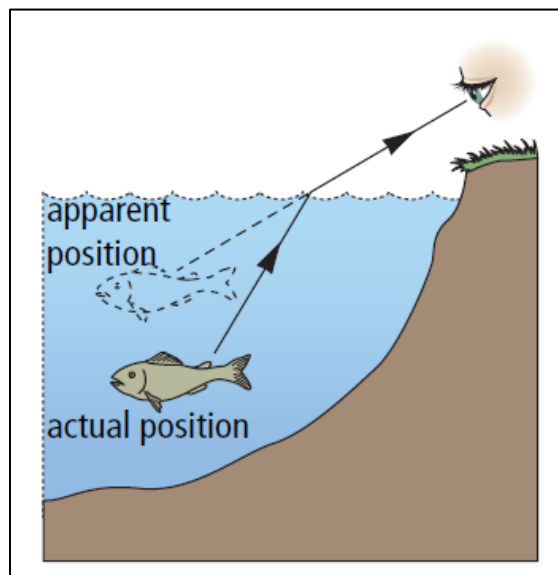


What happens to the speed and direction of light as it travels from air into different materials? Explain with reference to the diagram below.

As light travels from air into glass it slows down and changes direction (bends toward normal). This is very similar to what happens as a bike goes from pavement to sand – it slows down.



Explain the following diagram in terms of refraction:



As the light travels from the fish to your eyes the light bends as it moves from the water to the air. To our eye it looks like the fish is actually in direct line with those light rays. Thus the fish appears to be in a different place from where it actually is.