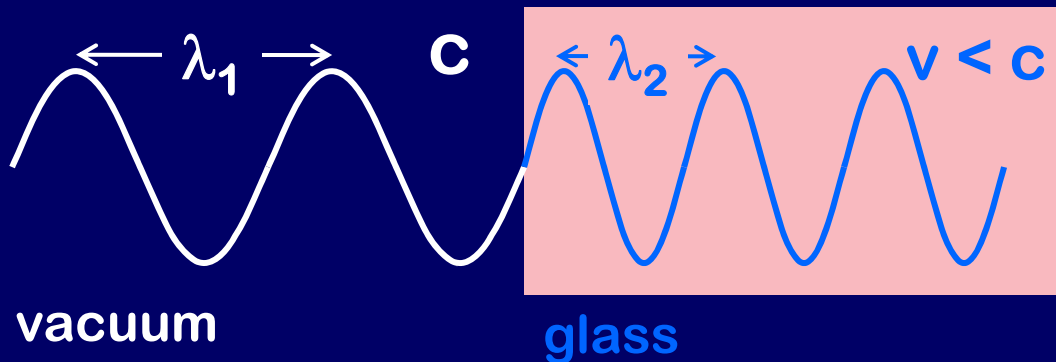


Index of Refraction

Recall speed of light $c = 3 \times 10^8$ m/s is in vacuum
In a medium (air, water, glass...) light is slower



Frequency is the same,
wavelength decreases

$$c = \lambda/f$$

“Index of refraction”

Speed of light
in medium

$$v = c/n$$

Speed of light
in vacuum

n is a property
of the medium:

$$\begin{aligned}n_{\text{vacuum}} &= 1 \\n_{\text{air}} &= 1.0003 \\n_{\text{water}} &= 1.33 \\n_{\text{glass}} &= 1.50\end{aligned}$$

$$n \geq 1$$