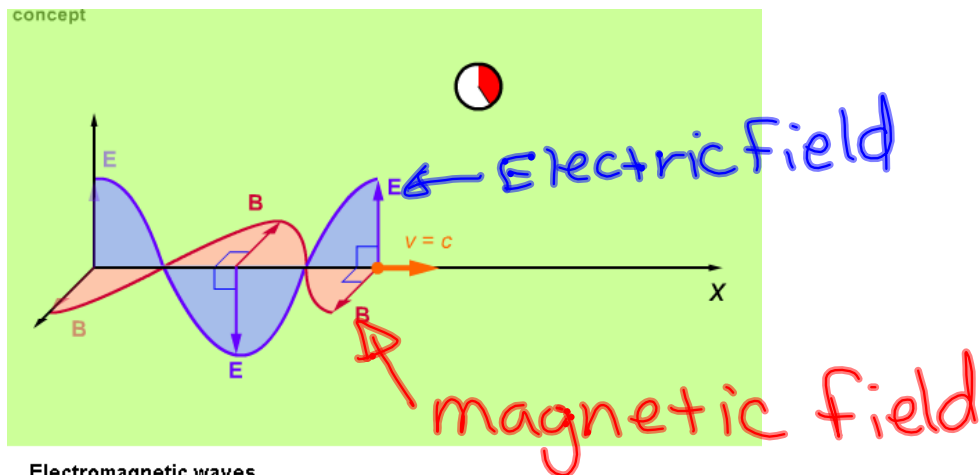


Electromagnetic Radiation

oscillating electric and magnetic fields can constitute a self-propagating wave that is called electromagnetic radiation - Maxwell



Electromagnetic waves

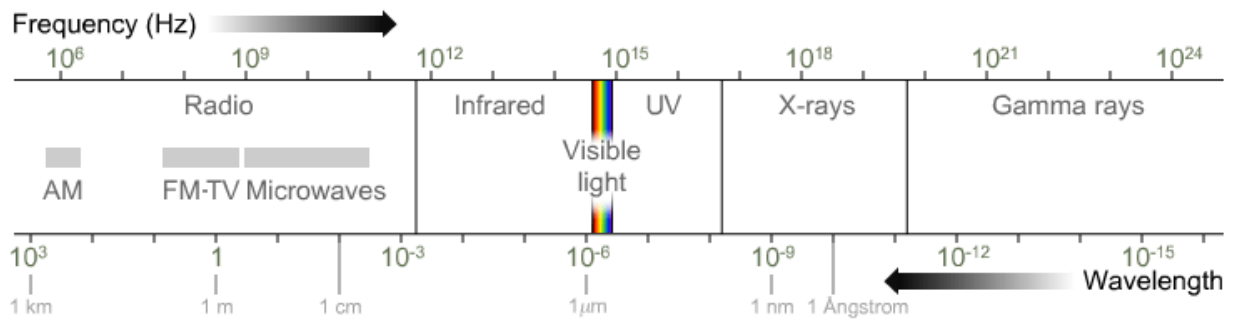
Consist of electric and magnetic fields

- Perpendicular to each other

Propagate as transverse waves

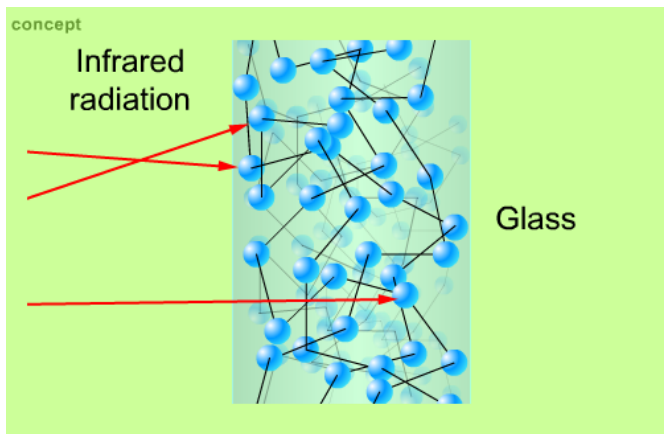
- Perpendicular to direction of travel

Electromagnetic Spectrum



Transmission of EM Waves

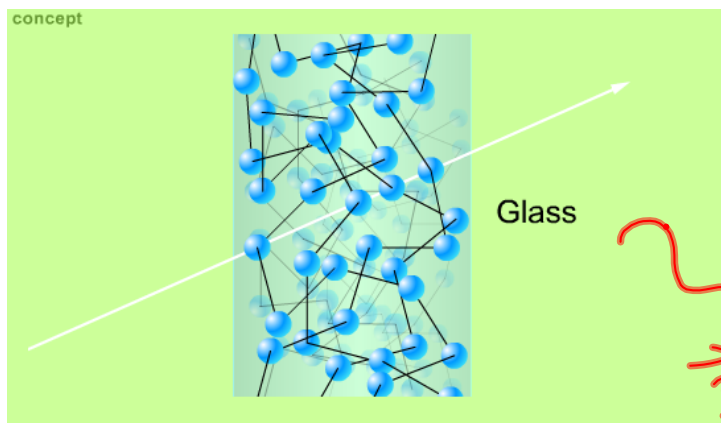
EM waves can propagate through a wide variety of materials and materials effect different frequency waves differently.



Glass opaque to infrared

Radiation is in resonance with molecules
Waves do not travel through

opaque!!
light → heat

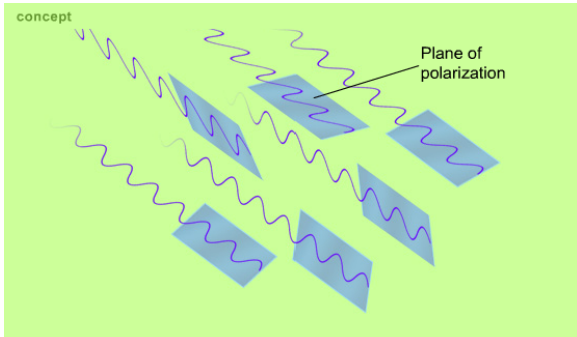


Glass transparent to visible light

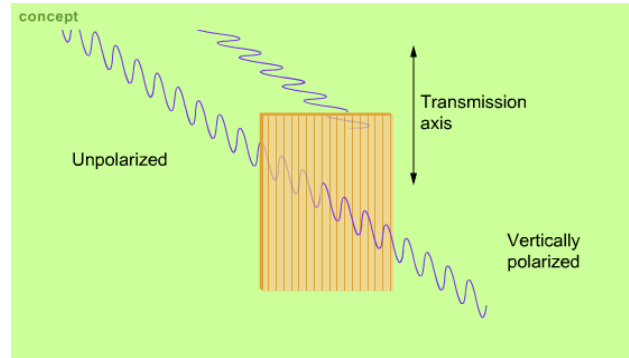
Waves absorbed by electrons of atoms
Re-emitted from neighbor to neighbor
Waves pass through but are slowed



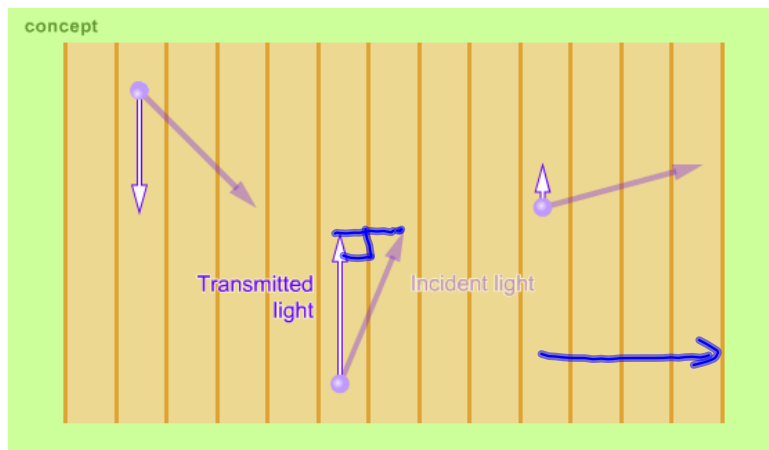
Polarization



Unpolarized light



polarization = plane in which electric field oscillates



Rotating Polarized Lenses

