

- 4.3g Electromagnetic radiation exhibits wave characteristics. Electromagnetic waves can propagate through a vacuum.
- 4.3h When a wave strikes a boundary between two media, reflection*, transmission, and absorption occur. A transmitted wave may be refracted.
- 4.3i When a wave moves from one medium into another, the wave may refract due to a change in speed. The angle of refraction (measured with respect to the normal) depends on the angle of incidence and the properties of the media (indices of refraction).*
- 4.3j The absolute index of refraction is inversely proportional to the speed of a wave.*
- 4.3k All frequencies of electromagnetic radiation travel at the same speed in a vacuum.*
- 5.3a States of matter and energy are restricted to discrete values (quantized).
- 5.3c On the atomic level, energy is emitted or absorbed in discrete packets called photons.*
- 5.3d The energy of a photon is proportional to its frequency.*
- 5.3e On the atomic level, energy and matter exhibit the characteristics of both waves and particles.
- draw ray diagrams to represent the reflection and refraction of waves
- determine empirically the index of refraction of a transparent medium