

SCIENCE

Sound & Light Unit Outline (4/19)

I. Properties and behaviors of sound and light.

- A. Forms of energy; move away from source in all directions [as waves].
- B. Interactions between waves and matter
 - 1. reflection: waves bounce off matter
 - a. Light: off any matter seen (best off shiny materials)
 - 2. absorption: waves trapped in matter and turn to thermal energy
 - a. Light: best with dark, dull materials (black T-shirt)
 - 3. transmission: waves travel through matter
 - a. Light: transparent or “see-through” materials (does **not** need matter to travel through)
- C. Light and vision
 - 1. Light from source reflects off object to eye; brain interprets information

II. Relationships among wave properties and properties of sound and light

- A. amplitude: determines sound’s volume and light’s intensity (brightness)
[not related to wavelength and frequency]
- B. longer wavelengths have lower frequency
 - 1. determines sound’s pitch and color (or type) of light

III. Electromagnetic Spectrum

- A. all forms of light energy (most invisible to human eyes)
- B. each type of light has its own wavelength and frequency
- C. parts: radio/TV, microwaves, infrared, visible light, ultraviolet, x-rays, gamma rays

