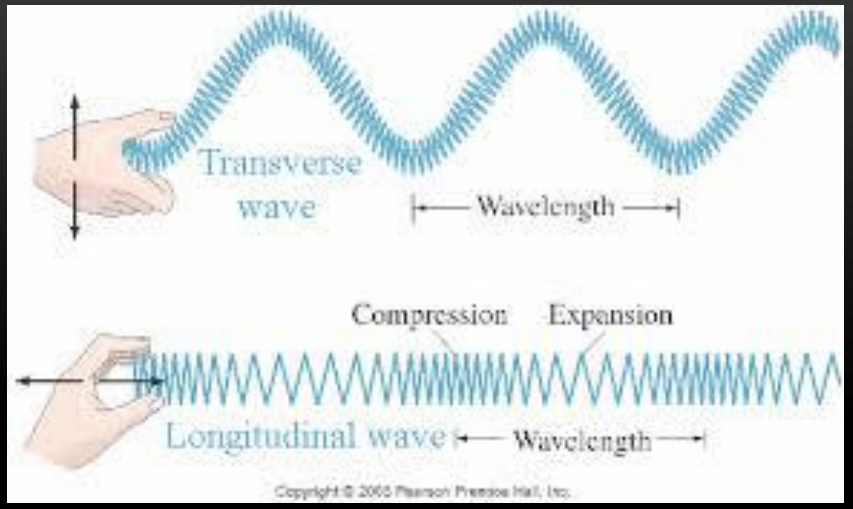
WAVES



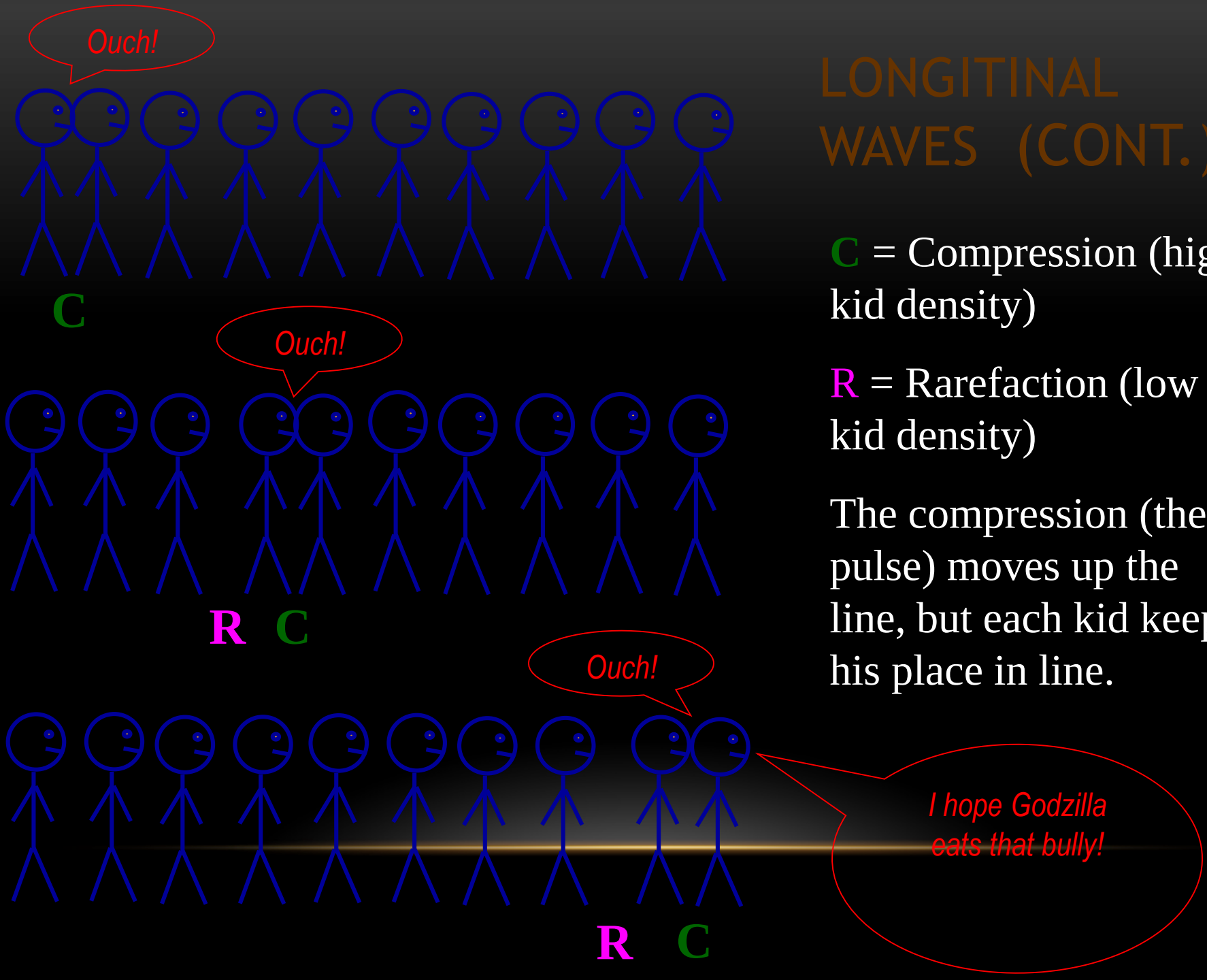
Write what is in WHITE. You will do this as an outline format

- 1. Wave
  - a disturbance that transfers energy from one place to another.
- Duck Example
- 2. Medium
  - any substance that a wave moves through
  - Examples: can be a solid liquid or gas
  - Can you hear sound in space?
  - Sound in space

- 3. Mechanical Waves-
  - waves that require a medium
    - Ex: Sound
- 4. Electromagnetic Waves-
  - waves that do not require a medium
  - Ex: visible light, radio waves

- 5. Longitudinal Wave
  - wave particles vibrate back and forth along the path that the wave travels.
  - Also known as a : Compressional Wave
  - 5a. Compressions
    - The close-together part of the wave
  - 5b. Rarefactions
    - The spread-out parts of a wave

LONGITINAL WAVES (CONT.)

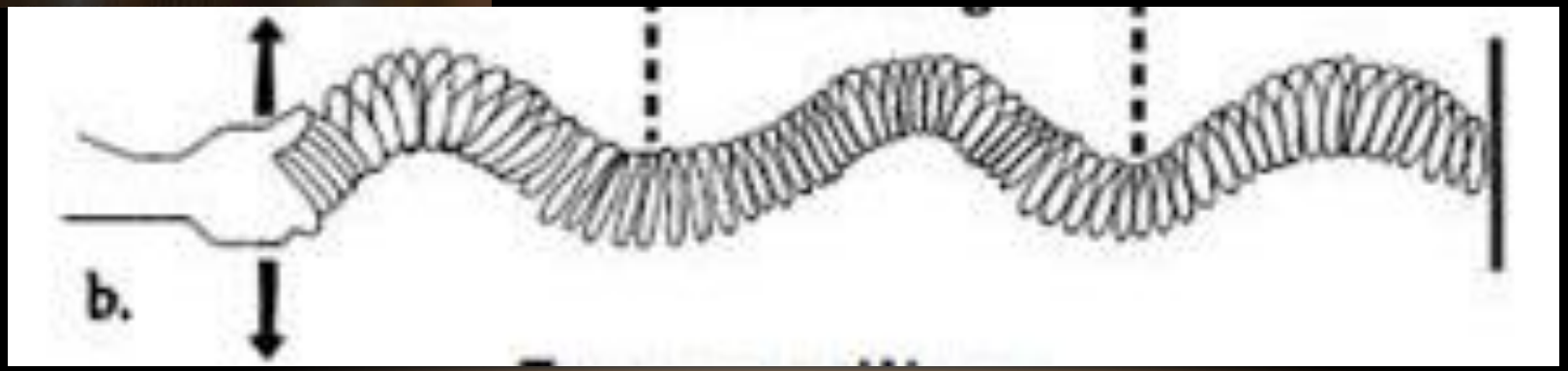


C = Compression (high kid density)

R = Rarefaction (low kid density)

The compression (the pulse) moves up the line, but each kid keeps his place in line.

- 6. Transverse waves
  - wave particles vibrate in an up-and-down or side-to-side motion



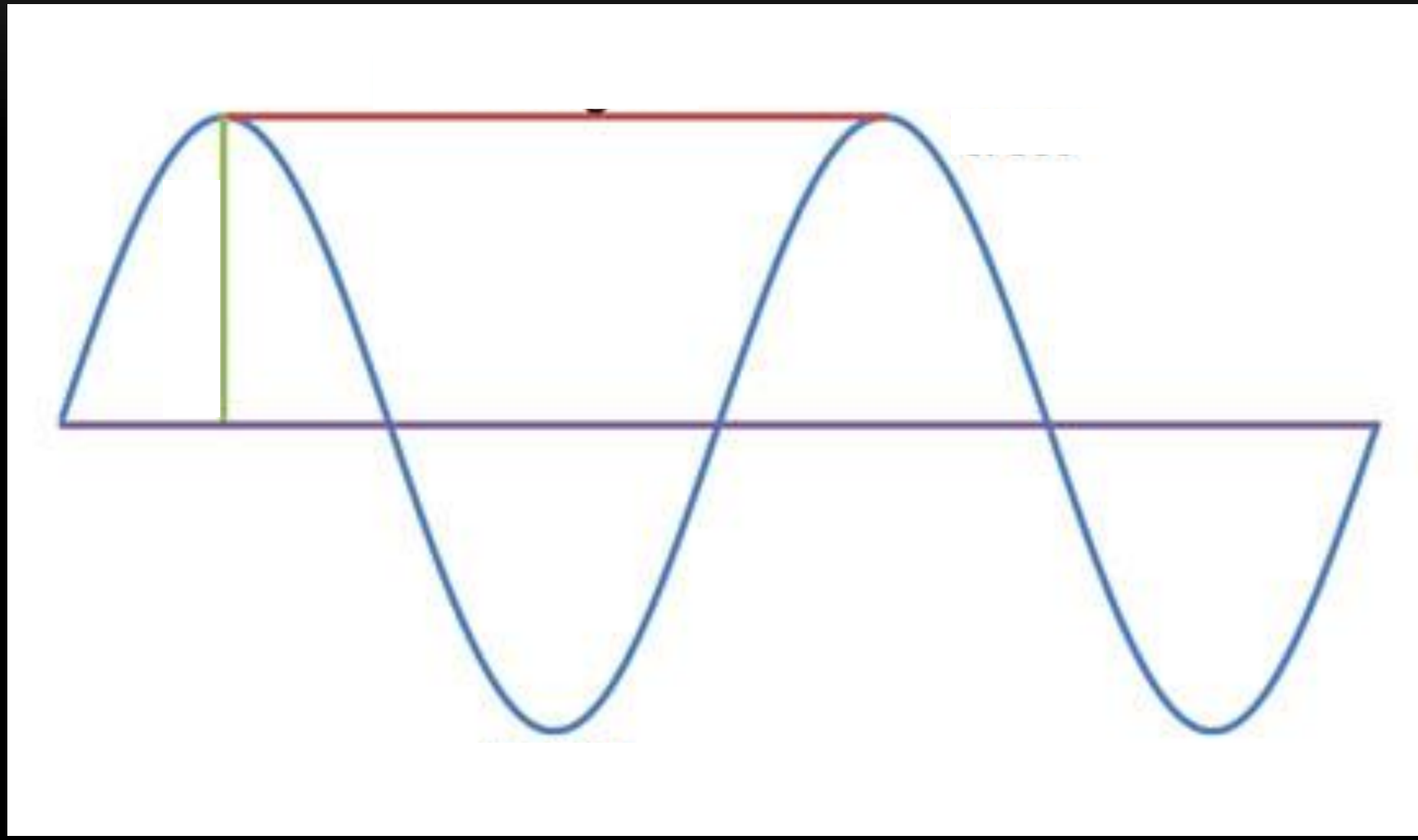
7. Wavelength- the distance between two successive points in the wave. (measured in meters)

8. Crests- Highest part of a wave

9. Troughs- The low points of the wave

10. Amplitude- is the maximum distance in a wave from its rest position. (height- in meters)

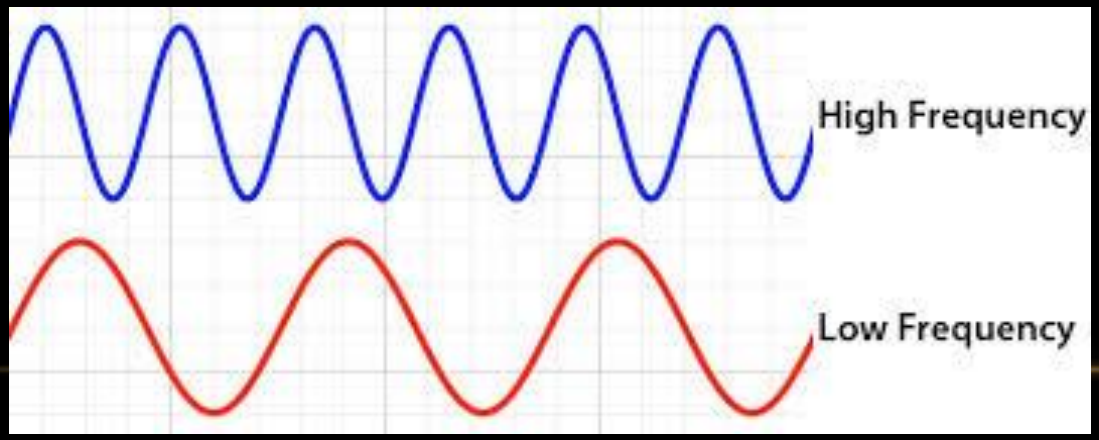
Draw and include labels when shown



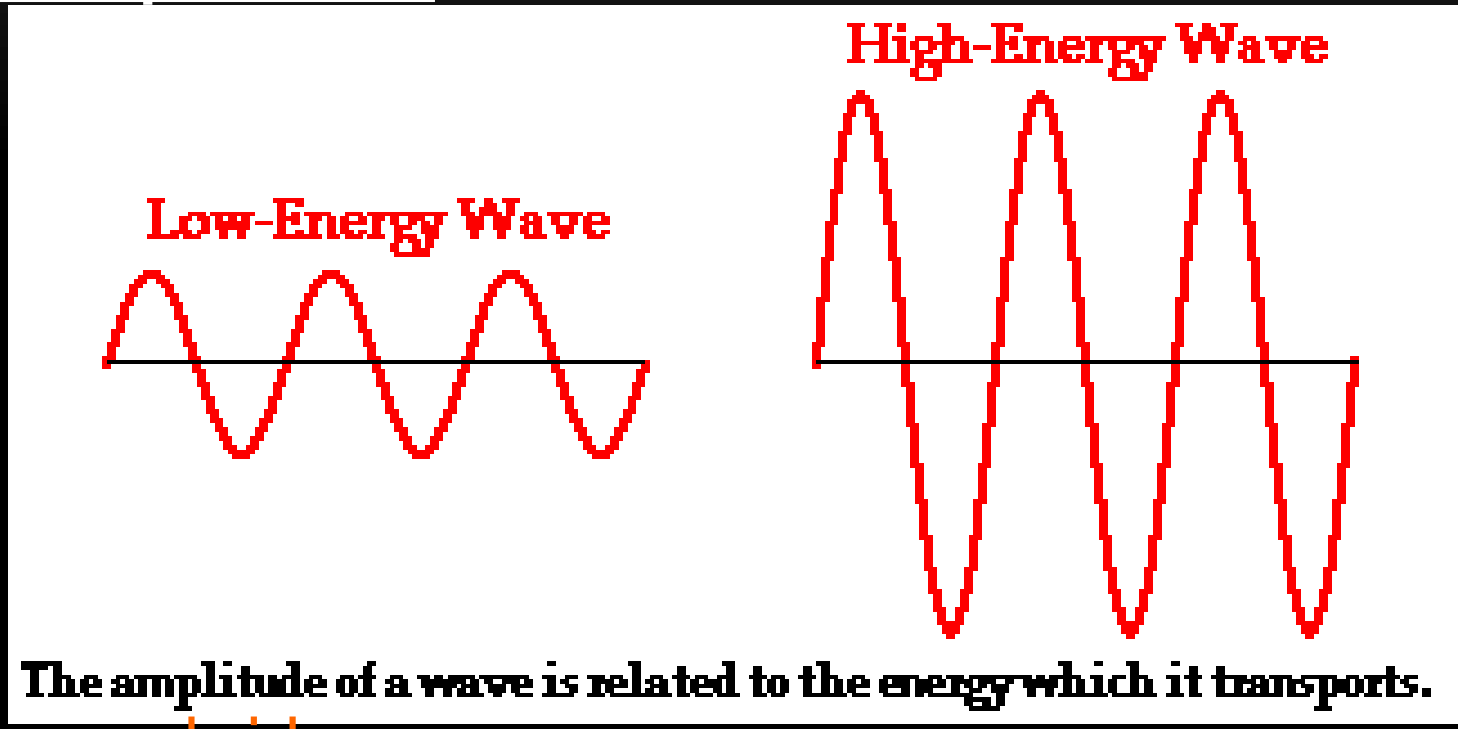
- https://www.youtube.com/watch?v=X1OGiWPq5j8
- https://www.youtube.com/watch?v=jmYemuXCC6Y

11. Frequency- the number of waves produced in a given time

a) Unit= measured in Hertz, Hz



12. E α A^2- Energy is proportional to amplitude squared



Tacoma narrow bridge

https://www.youtube.com/watch?v=3mclp9QmCGs

https://www.youtube.com/watch?v=nFzu6CNtqec

13. Photon- Massless "no rest" particle

- Travels 186,282 miles per second (Speed of light)

- Vacuum-Space entirely devoid of matter
- Radiation- The process in which energy is emitted as particles or waves

YOU TUBE WAVES

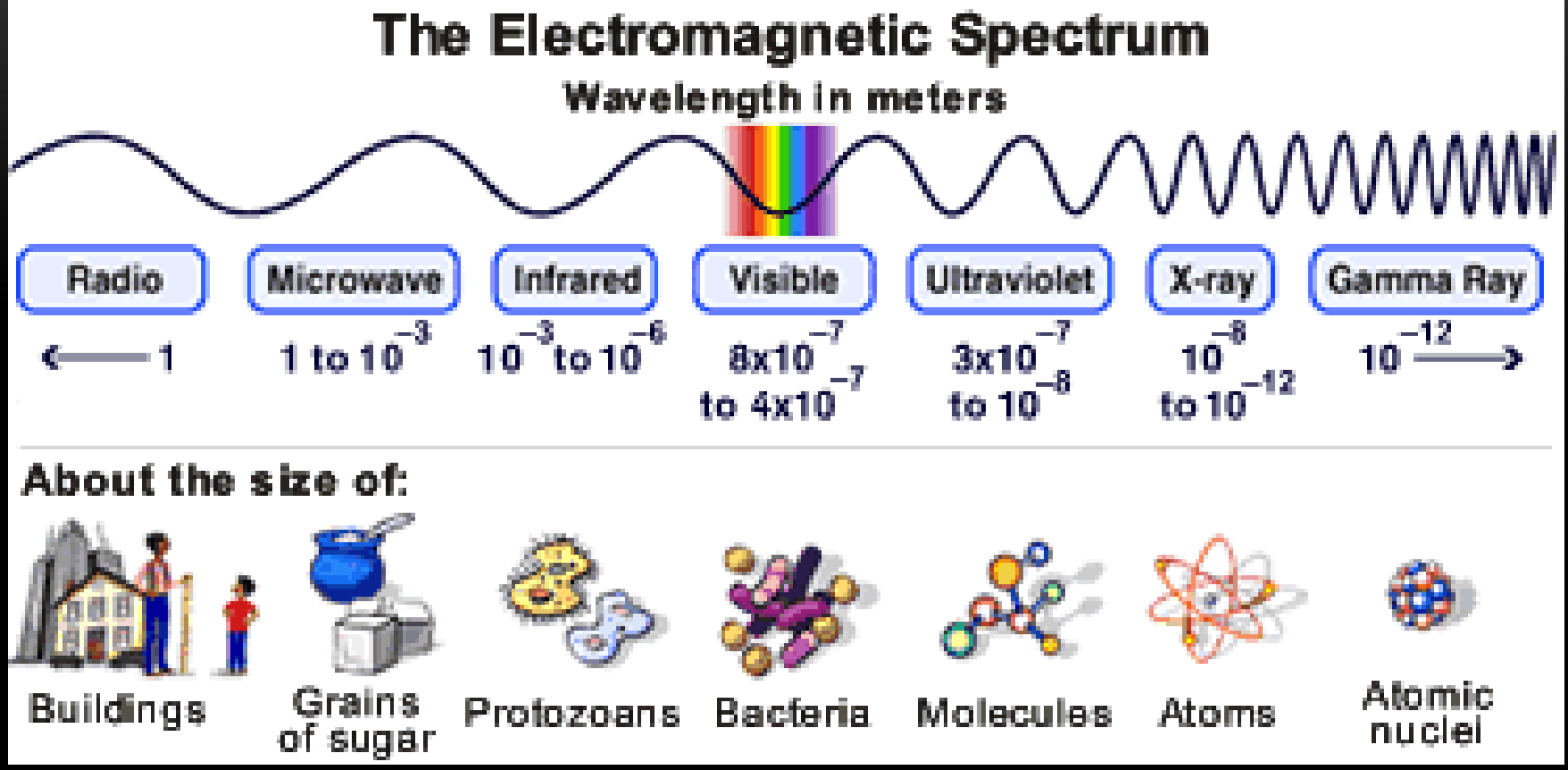
https://www.youtube.com/watch?v=1M8ciWSgc_k

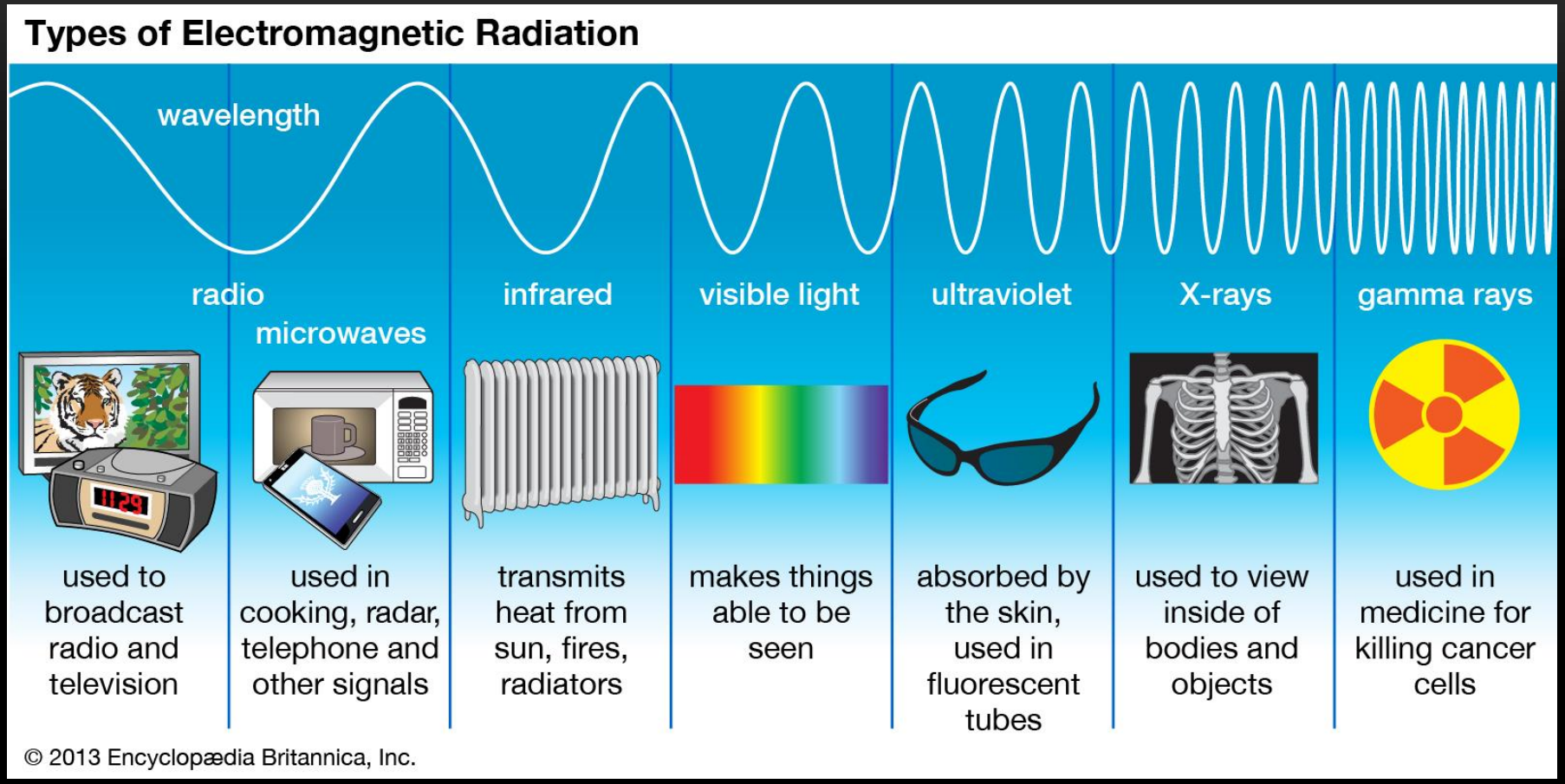
https://www.youtube.com/watch?v=yVkdfJ9PkRQ

https://www.youtube.com/watch?v=iqpV1236_Q0&t=151s

https://www.youtube.com/watch?v=pk1y_qIAQ-w

The Electromagnetic Spectrum





- http://www.pbslearningmedia.org/resource/nvsl.sci.space.spectrum/the-electromagnetic-spectrum/

EM SPECTRUM

- Radio Waves
- Infrared
- Visible Light
- Ultra Violet
- Xrays
- Gamma Rays

- Low end of spectrum, mile long wavelength, low frequency
- Heat rays, used to determine temperature of stars
- 3% of light, red → violet
- Causes chemical change (sunburn)
- Shorter wavelength/higher frequency than UV, depends on voltage
- Highest frequency/shortest wavelength

Most dangerous, found in universe