

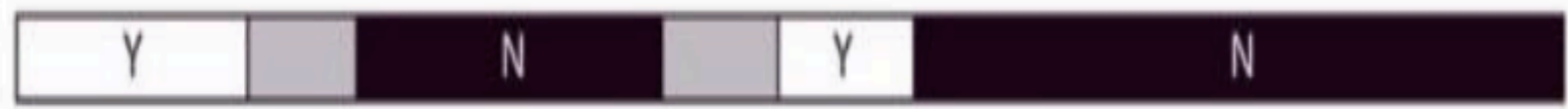
Electromagnetic Spectrum

Foldable

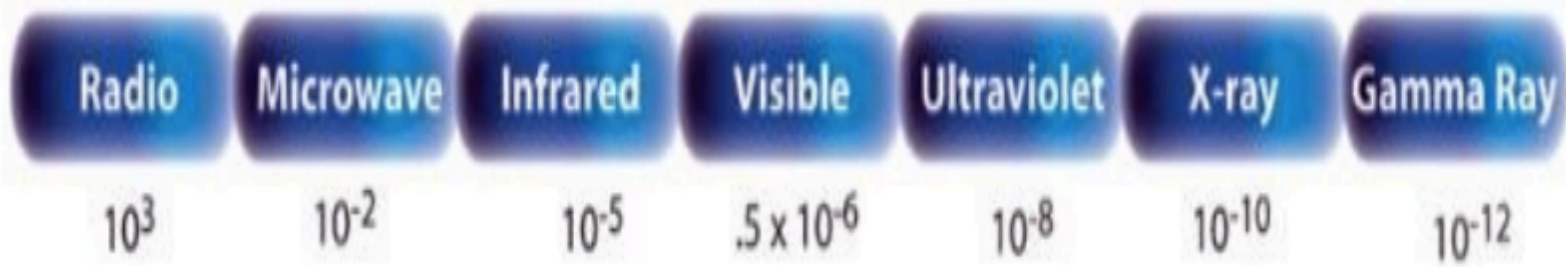
For each wave type include....

1. Wavelength measure (m): Long? Short?
2. Frequency: High/Low Energy: High/Low
3. Penetrates Earth's Atmosphere - Yes/No
4. About the size of....
5. Used for...
6. Dangerous or useful?

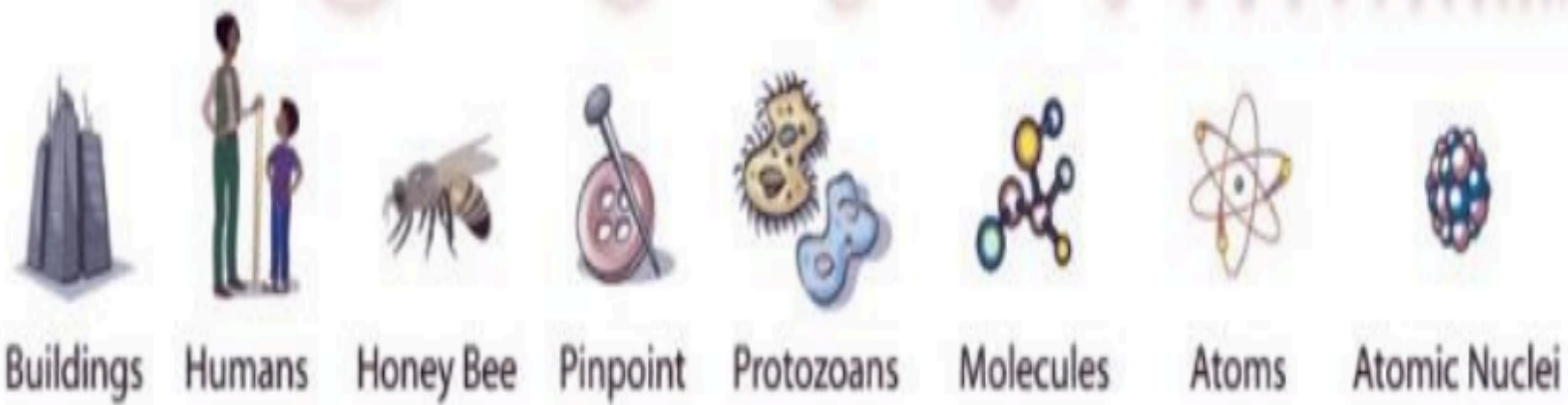
Penetrates Earth Atmosphere?



Wavelength (meters)

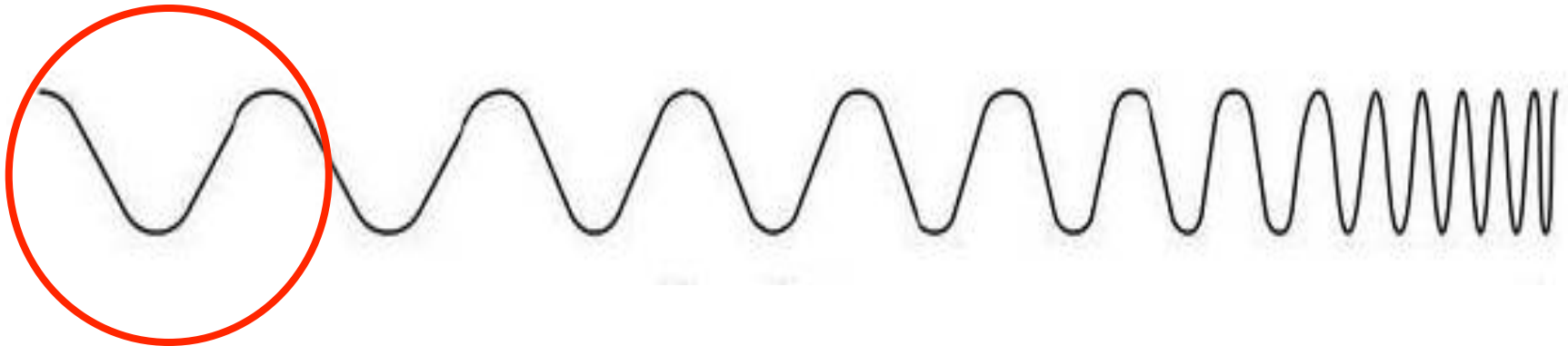


About the size of...



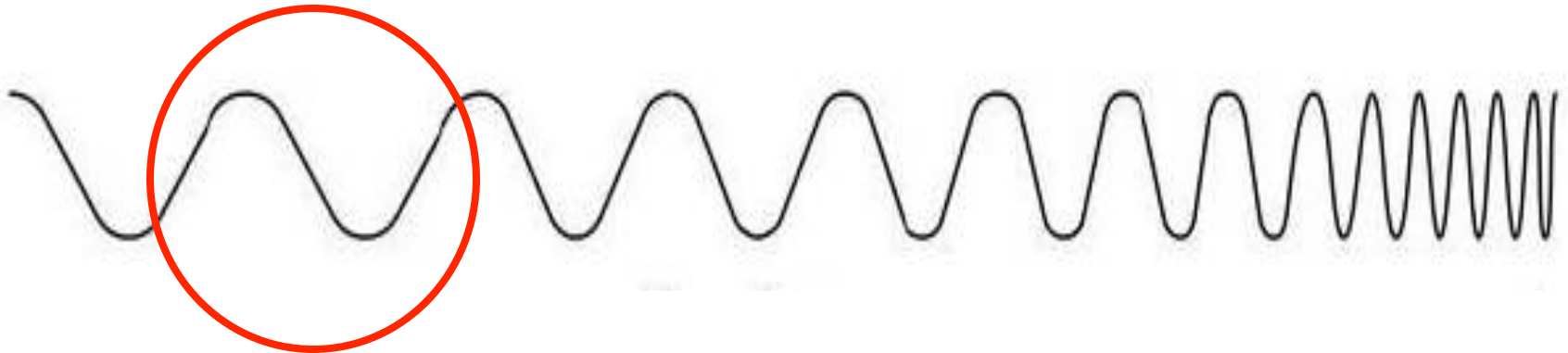
Radiowaves

- A. Longest wavelengths, Lowest frequencies**
- B. Used in broadcasting to carry signals for radio programs**
- C. Useful**



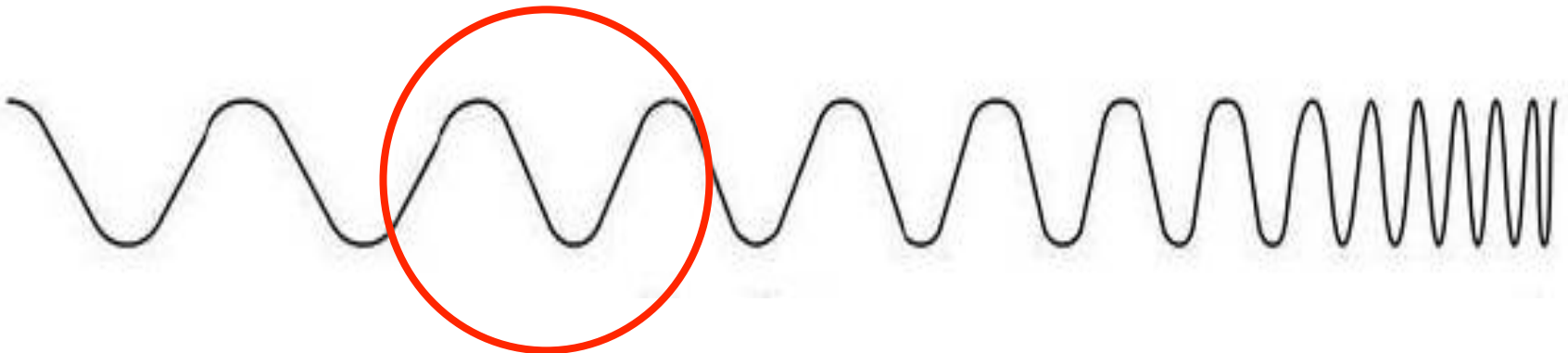
Microwaves

- A. Have shorter wavelengths and higher frequencies than radio waves**
- B. Used in microwaves to cook food, cellular phones, radar guns**
- C. Useful**



Infrared Rays

- A. Have shorter wavelengths and higher frequencies than microwaves**
- B. Used in heat lamps to keep things warm. Also used in infrared cameras to detect heat.**
- C. Useful**



Visible Light

- A. Have shorter wavelengths and longer frequencies than infrared rays.**
- B. White light can be separated into red, orange, yellow, green, blue, and violet (ROY G BIV)**
- C. Red has the longest wavelength and lowest frequency. Violet has the shortest wavelength and highest frequency.**



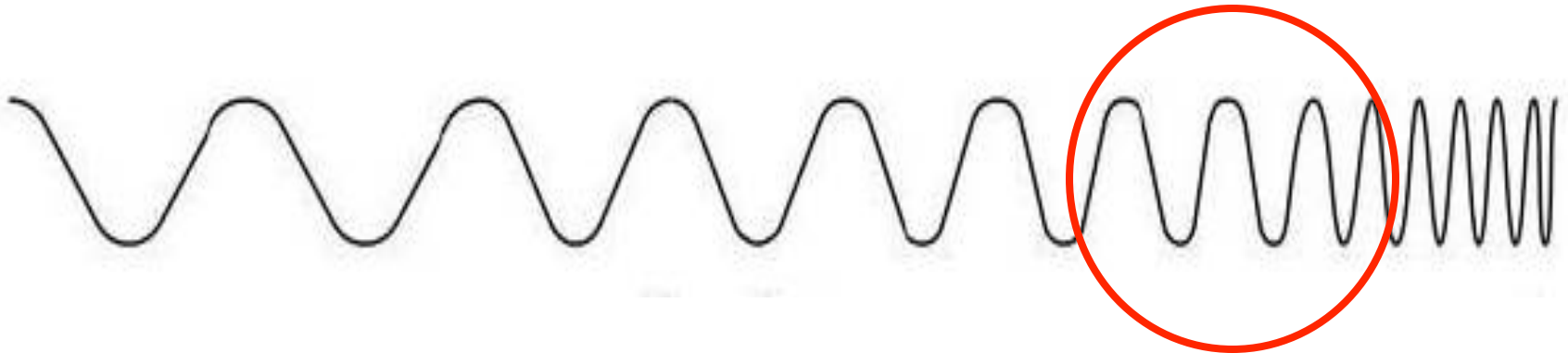
Ultraviolet Rays

- A. Shorter wavelengths and higher frequencies than visible light.**
- B. Energy is great enough to damage or kill living cells. Too much exposure can burn your skin. Small doses can cause skin cells to produce vitamin D.**
- C. Useful and Hazardous**



X-rays

- A. Shorter wavelengths and higher frequencies than ultraviolet rays**
- B. Can penetrate most matter. Can be used to make images of bones and teeth. Too much exposure can cause cancer.**
- C. Useful and hazardous**



Gamma Rays

- A. Shortest wavelengths and highest frequencies**
- B. Most penetrating of all waves. Can be used to examine the body's internal structures.**
- C. Useful and hazardous.**

