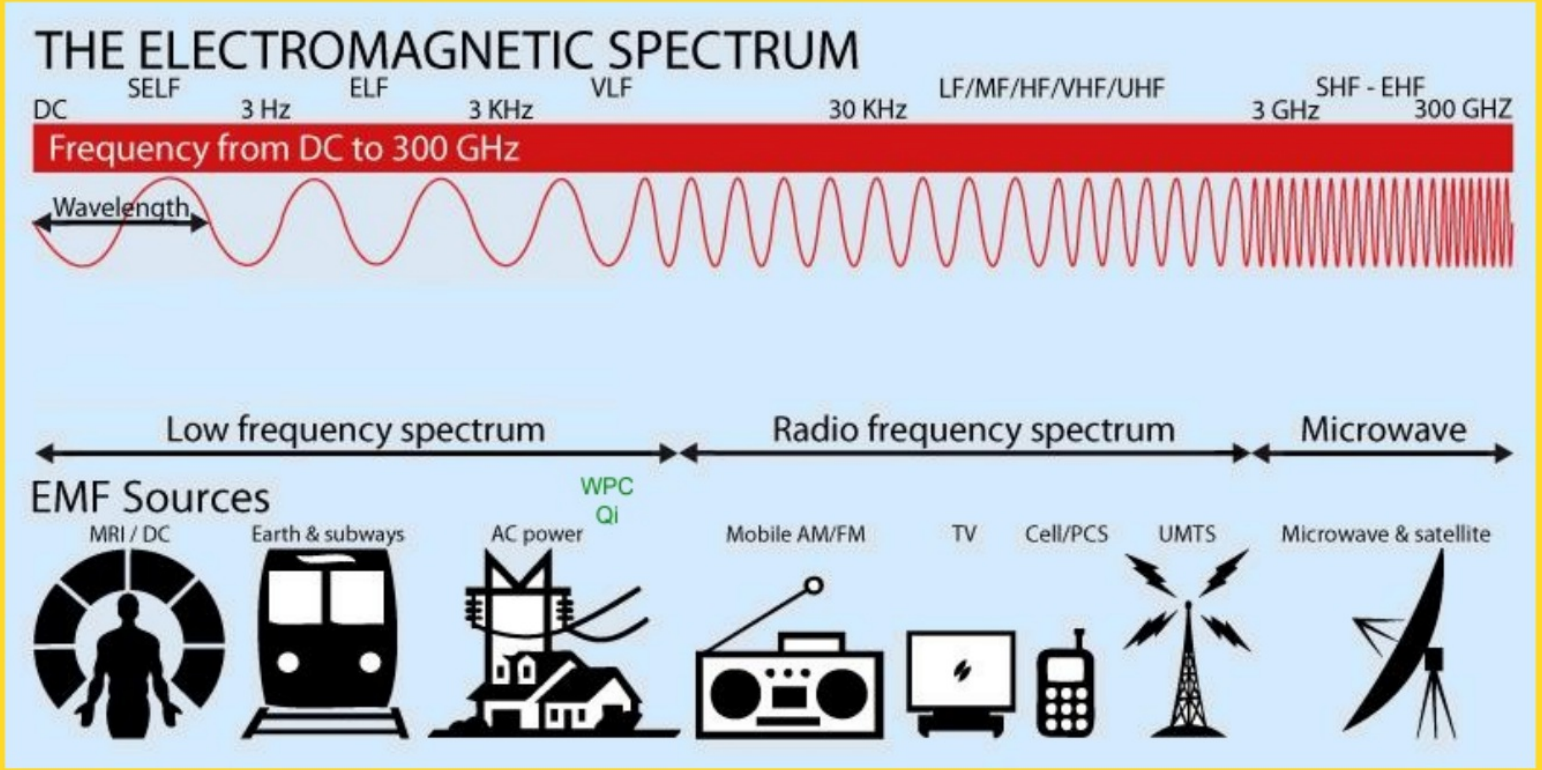
ELECTROMAGNETIC WAVES



BRAINSTORM DIFFERENT

TYPES OF

ELECTROMAGNETIC WAVES

LEFT SIDE OF NOTESBOOK

Draw the following on the LEFT: include pictures, words, and wave

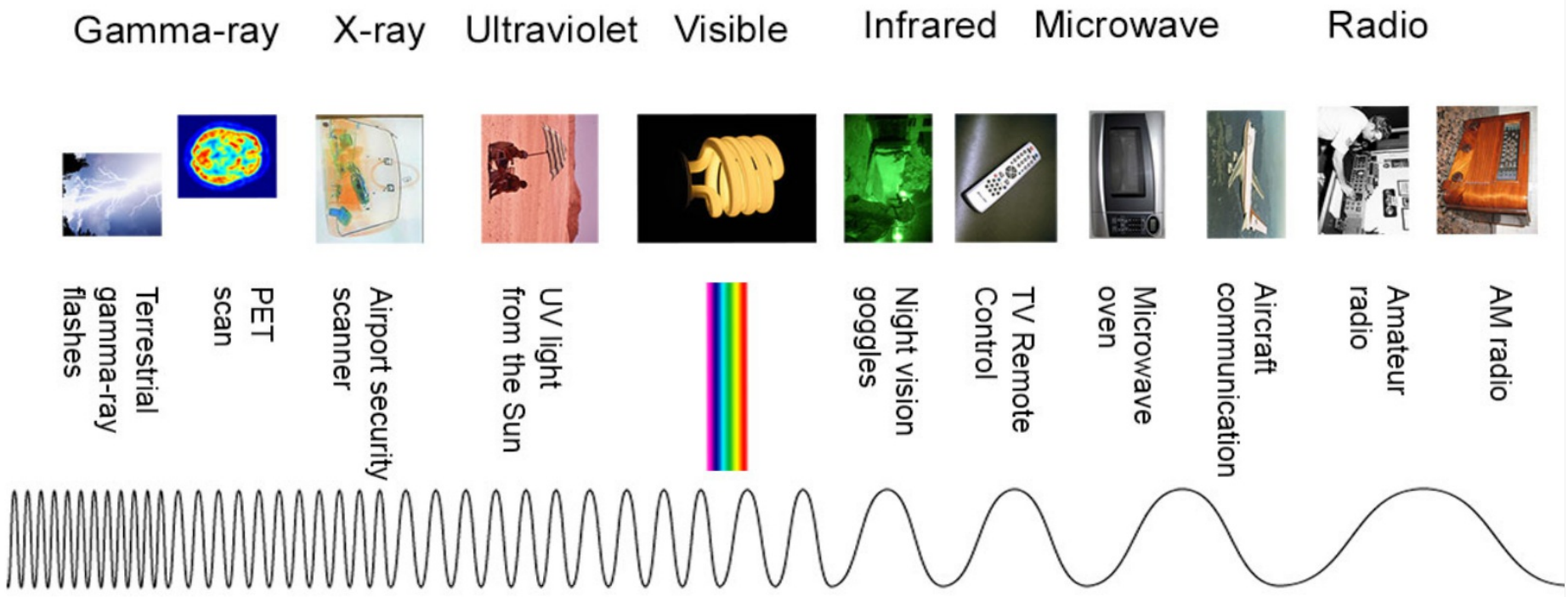
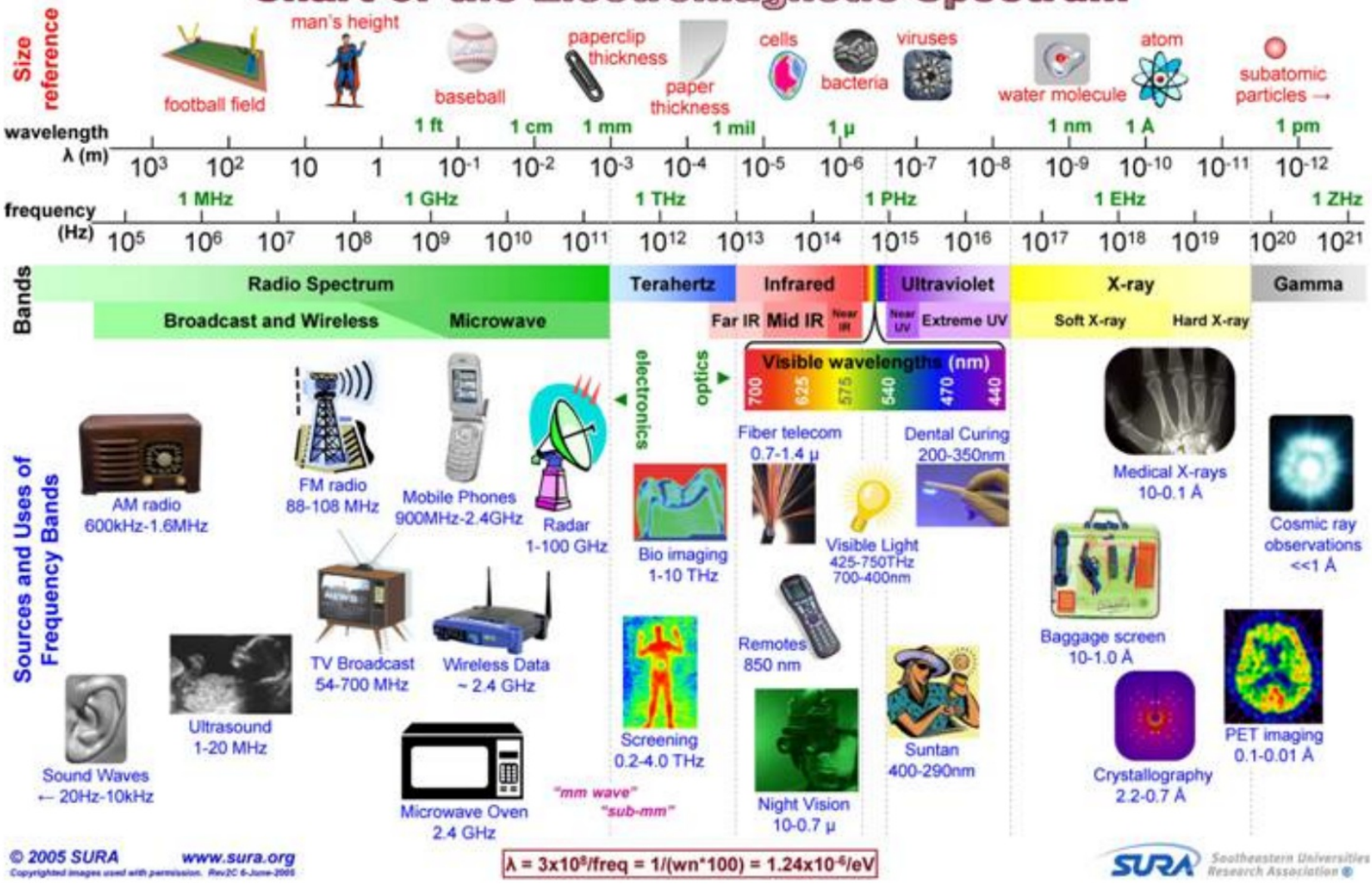


Chart of the Electromagnetic Spectrum



$\lambda = 3 \times 10^8 / \text{freq} = 1/(\text{wn} * 100) = 1.24 \times 10^{-6} / \text{eV}$

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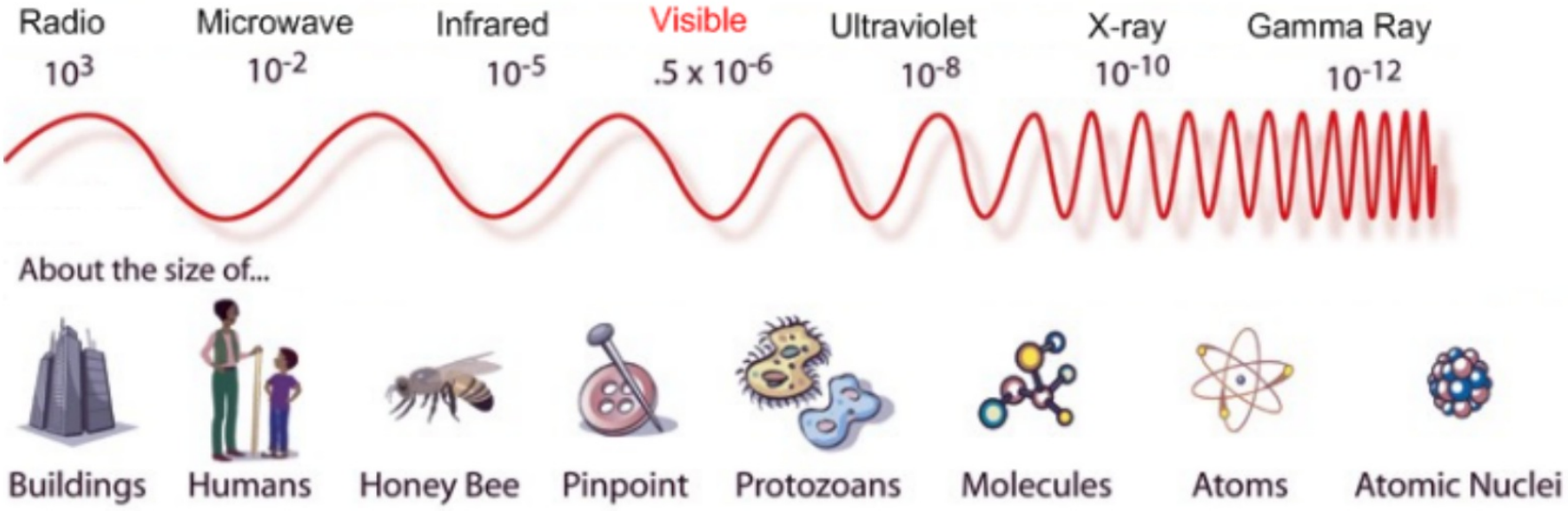
Right side of notebook:

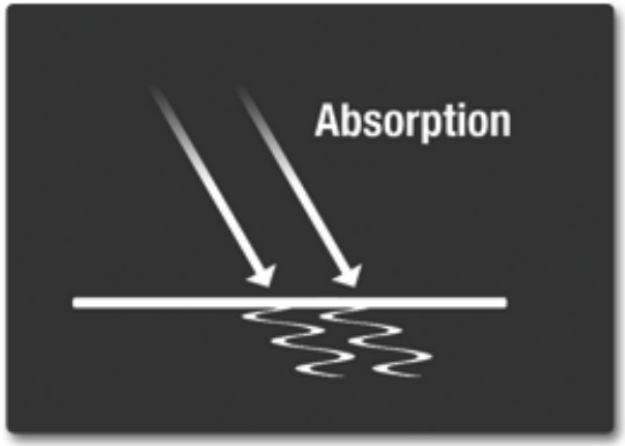
Electromagnetic waves (including light)

travel as TRANSVERSE waves.



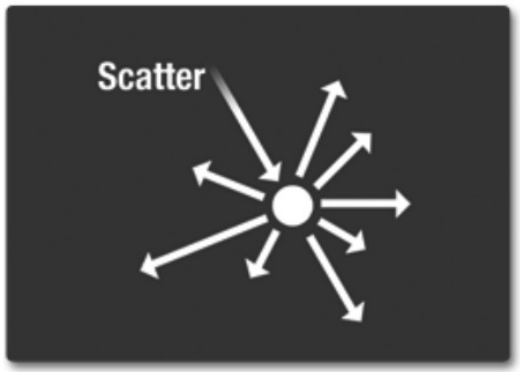
Electromagnetic waves can have different wavelengths.

Some types of matter will absorb electromagnetic waves.



Radiation can cause heating in absorbers. For example, when you warm your hands near a fire, the infra red (IR) radiation is absorbed by your hands. The absorbed radiation makes the molecules in your hands move faster so they get warmer.

Some types of matter will scatter electromagnetic waves.



The sky appears blue because of this scattering behavior. Light at shorter wavelengths—blue and violet—is scattered by nitrogen and oxygen as it passes through the atmosphere. Longer wavelengths of light—red and yellow—transmit through the atmosphere. This scattering of light at shorter wavelengths illuminates the skies with light from the blue and violet end of the visible spectrum. Even though violet is scattered more than blue, the sky looks blue to us because our eyes are more sensitive to blue light.

ELECTROMAGNETIC WAVES CAN CHANGE THE TEMPERATURE OF MATTER.

Microwave Interactive:

http://phet.colorado.edu/en/simulation/microwaves