

Note Taking Guide - Episode 1301

Electromagnetic waves:

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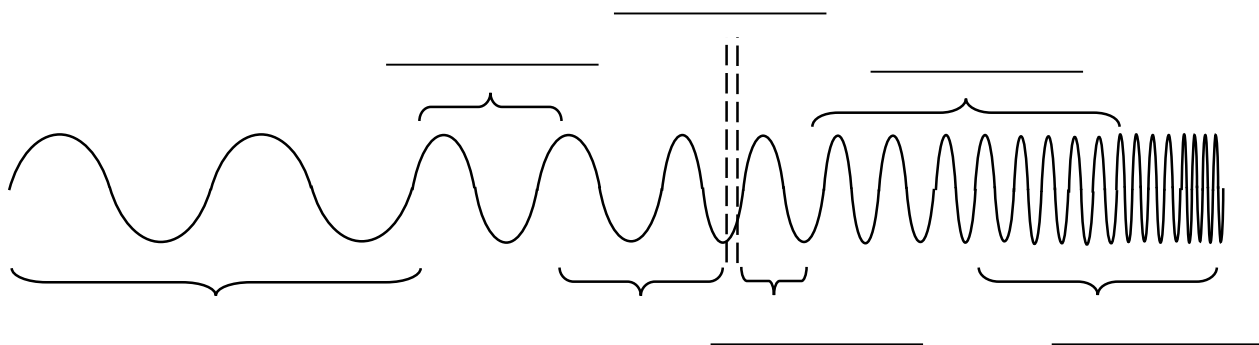
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Electromagnetic spectrum:

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Radio Waves:

- have the lowest _____ and the longest _____.
- includes _____ waves, which are _____ (very high frequency) or _____ (ultra high frequency), and _____, with highest frequency
- Each radio station broadcasts at a set frequency. Radio waves are the _____ waves for sound.
- Sound waves are converted into electrical signals and change (modulate) the carrier waves.
am - _____ modulation
fm - _____ modulation
- In receiver antennae, electrons are made to vibrate sympathetically at set frequency (concept of _____)

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Microwaves:

- penetrate food _____.
- match the natural frequencies of large molecules, which vibrate and produce _____ to cook food from inside.
- _____ molecules in the oven are too small to be excited, and microwaves also have no effect on _____, _____, or _____.
- Metals _____ microwaves.
- Droplets of _____ absorb microwaves and form steam.
- CHALLENGE -When food is removed from oven, molecules continue to _____, so _____ time is included in recipes.

Infrared:

- _____ and regular sized _____ vibrate to produce infrared waves.
- All objects emit infrared waves in the form of _____.
- uses for infrared waves:

Visible Light:

- electromagnetic radiation to which _____ are sensitive.
- makes up less than _____% of electromagnetic spectrum
- different frequencies are seen as _____.
red - lowest _____ and _____ energy
violet - highest _____ and _____ energy

Ultraviolet:

- cause _____ and _____
- uses:
- higher UV frequencies are blocked by _____ in atmosphere

X-rays:

- discovered by _____
- produced by greatest acceleration of _____.
- uses:

Gamma Rays:

- highest _____ and greatest _____ power
- produced by _____ reactions, including decay of _____ atoms and nuclear explosions
- kills _____ cells before it kills _____ cells
- use: