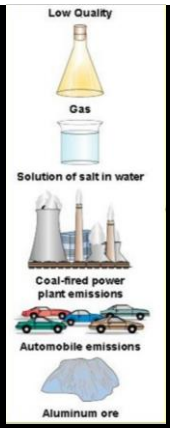
AIM:

10/5

How is matter and energy classified based on its quality?

Low Quality Matter:

- disorganized
- dilute
- difficult to extract
- deep underground or dispersed in air/water

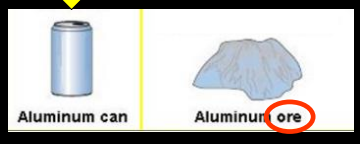


Matter Quality:

how useful matter is based on availability and concentration

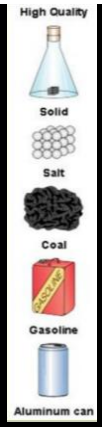
Entropy: measure of disorder of a system

lower entropy – more order



High Quality Matter:

- organized
- concentrated
- easier to extract
- found near surface



Aluminum Ore

Energy Quality:

measure of an energy source's ability to perform useful work

Forms of Energy:

Potential Energy
v.
Kinetic Energy
(yet again …)

High Quality Energy:

organized, concentrated, useful

Examples
- a. electricity
- b. coal
- c. gasoline
- d. concentrated sunlight
- e. nuclei in radioactive elements
- f. concentrated heat

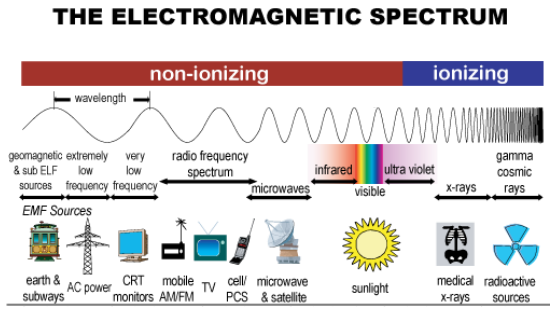
Electromagnetic Radiation:

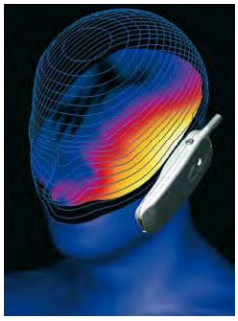
form of kinetic energy consisting of oscillating transverse waves

Low Quality Energy:

disorganized, dispersed

Example: heat dispersed in the atmosphere or ocean





Ionizing Radiation:

radiation with enough energy to knock electrons from atoms and make them positive ions

dangerous to living cells – potentially cancer-causing