Characteristics of Life

- Made up of cells
- Maintains homeostasis = stable internal environment
- Responds to its environment
- Can reproduce
- Has heredity (DNA)
- Uses energy
- Grows

Characteristics of Life

- Objects must have ALL the characteristics to be considered a living thing

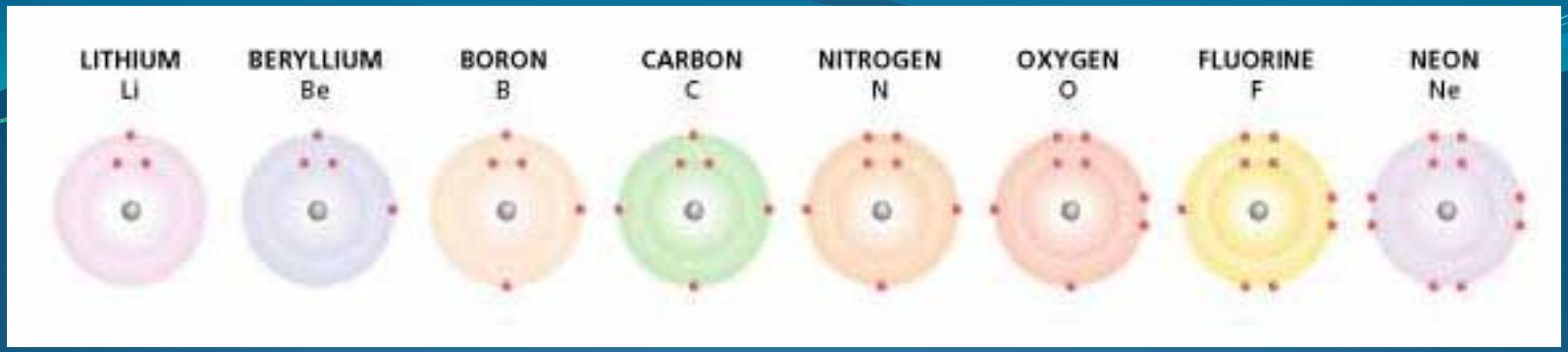
Levels of Organization of Life

- Atom = Smallest unit of matter that cannot be broken down by chemical means
  - Ex: carbon C, hydrogen H, oxygen O, nitrogen N, and phosphorous P
- Molecule = Group of atoms bounded together
  - Ex: H_2O, O_2, CO_2
- Macromolecule = large molecule
  - Ex: carbs, lipids, proteins, nucleic acids

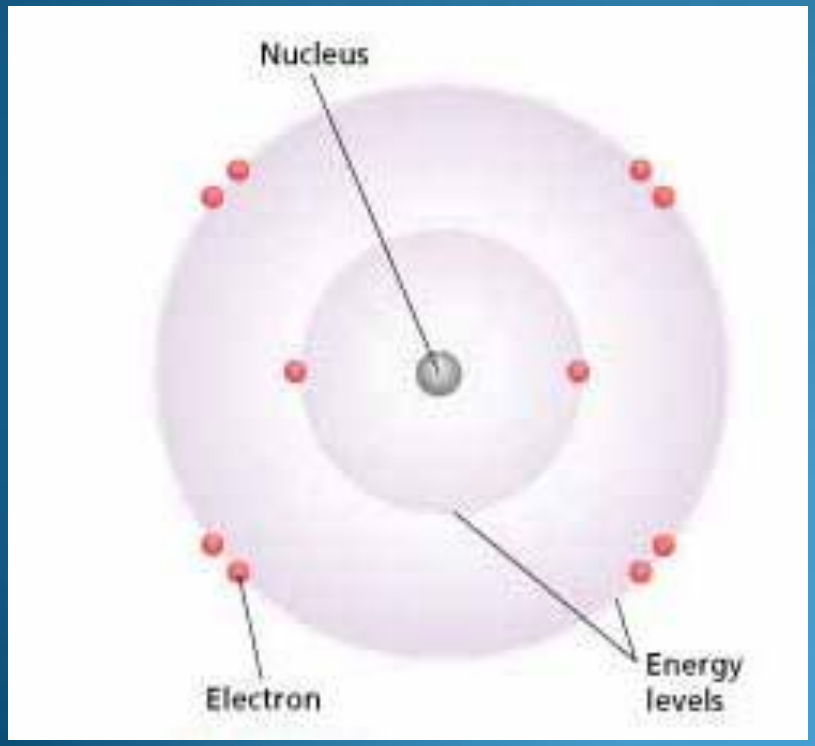
Levels of Organization of Life

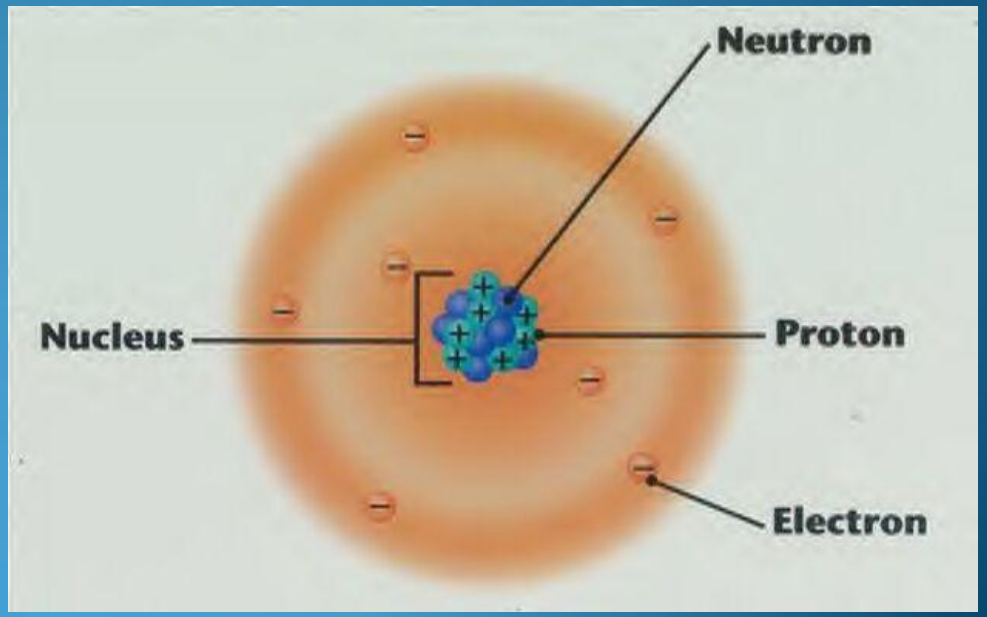
- Organelle = Structure that carries out the specific activities of the cell
  - Ex: nucleus, mitochondria, lysosome

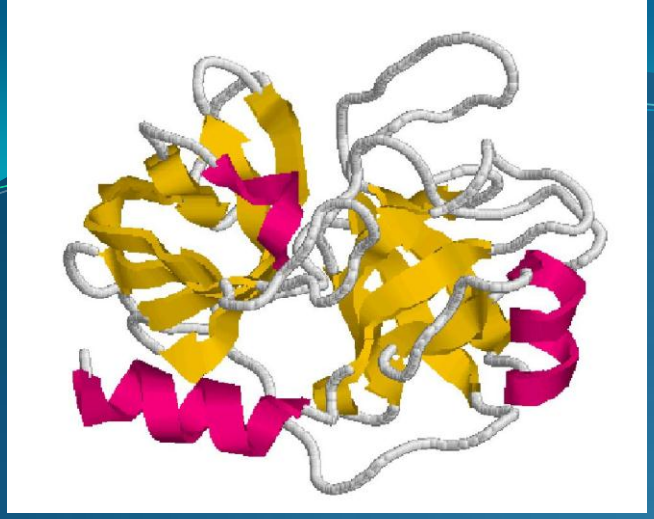
- Cell = Highly organized structure enclosed in a membrane
  - Ex: prokaryotic and eukaryotic

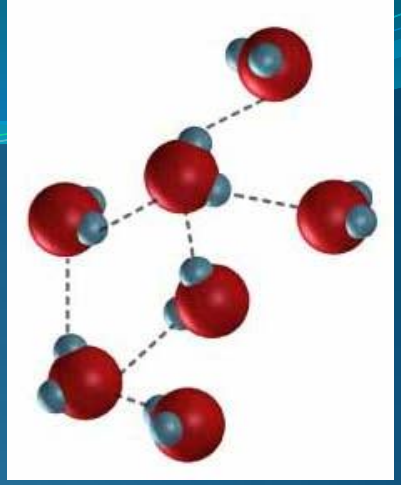

LITHIUM
Li
BERYLLIUM
Be
BORON
B
CARBON
C
NITROGEN
N
OXYGEN
O
FLUORINE
F
NEON
Ne

ATOM

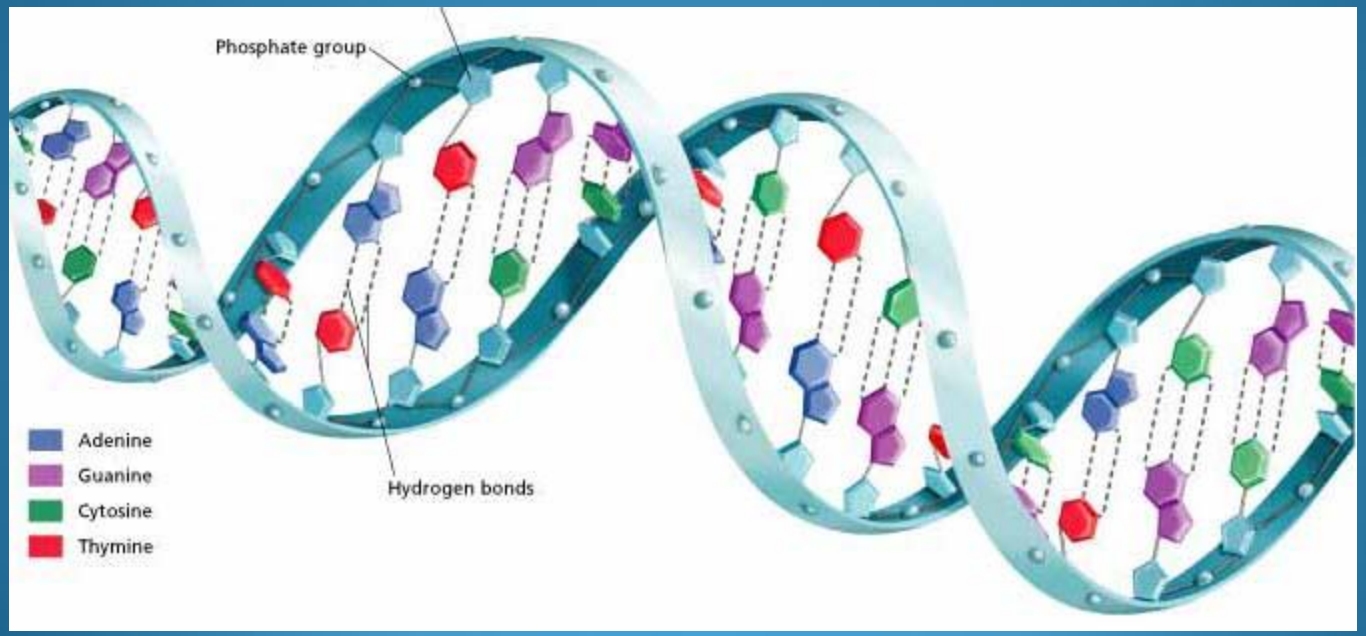

Nucleus
Electron
Energy levels


Neutron
Nucleus
Proton
Electron

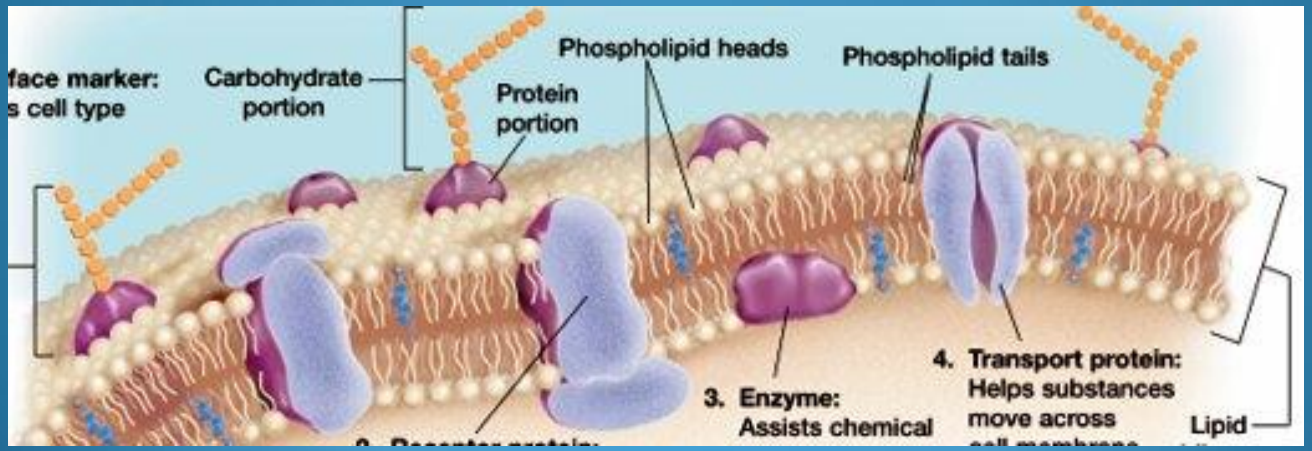




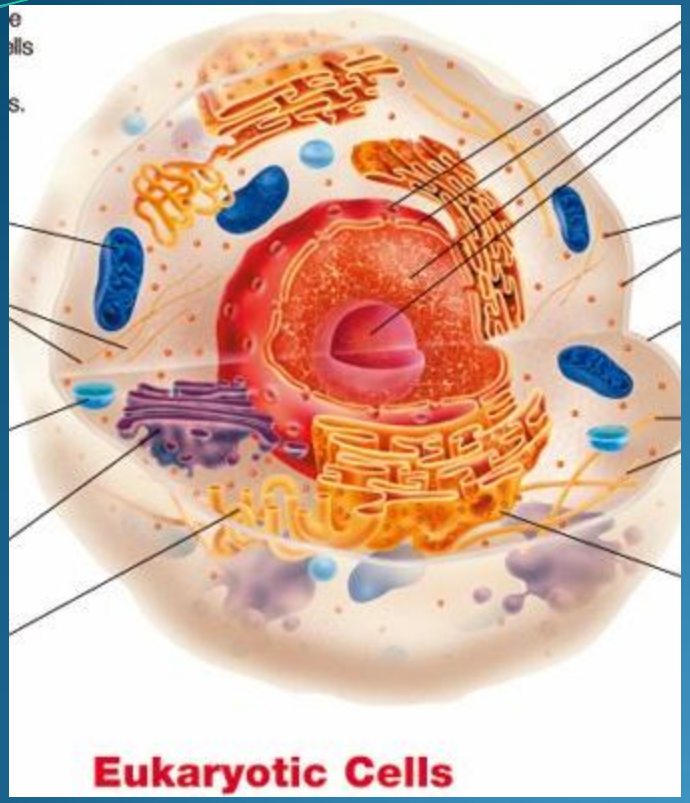
MOLECULE

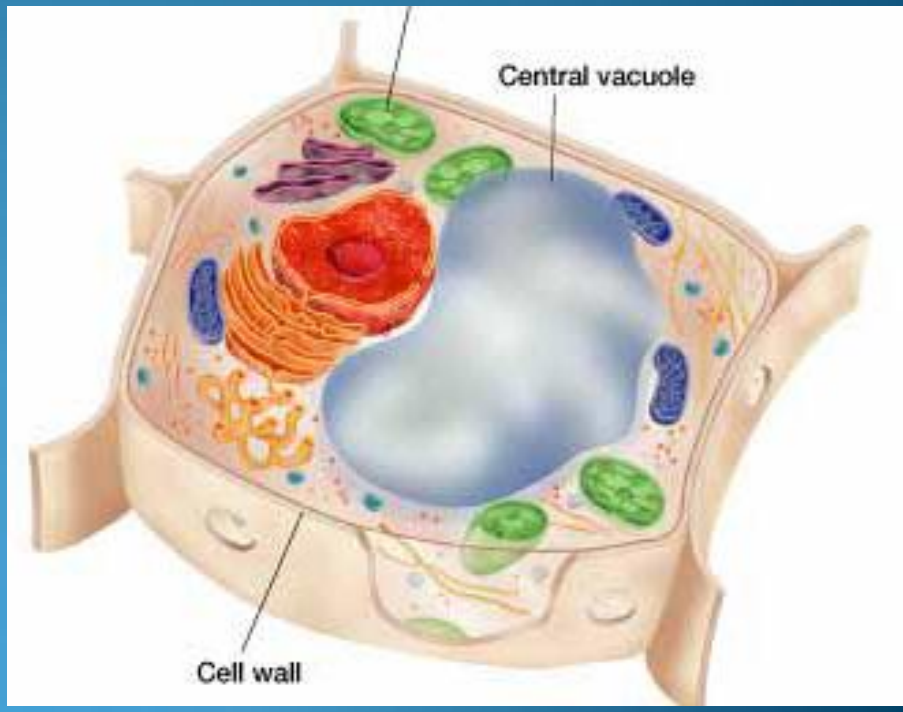

Phosphate group
Adenine
Guanine
Cytosine
Thymine
Hydrogen bonds

ORGANELLE


face marker:
s cell type
Carbohydrate portion
Protein portion
Phospholipid heads
Phospholipid tails
3. Enzyme:
Assists chemical
4. Transport protein:
Helps substances
move across
Lipid

CELL

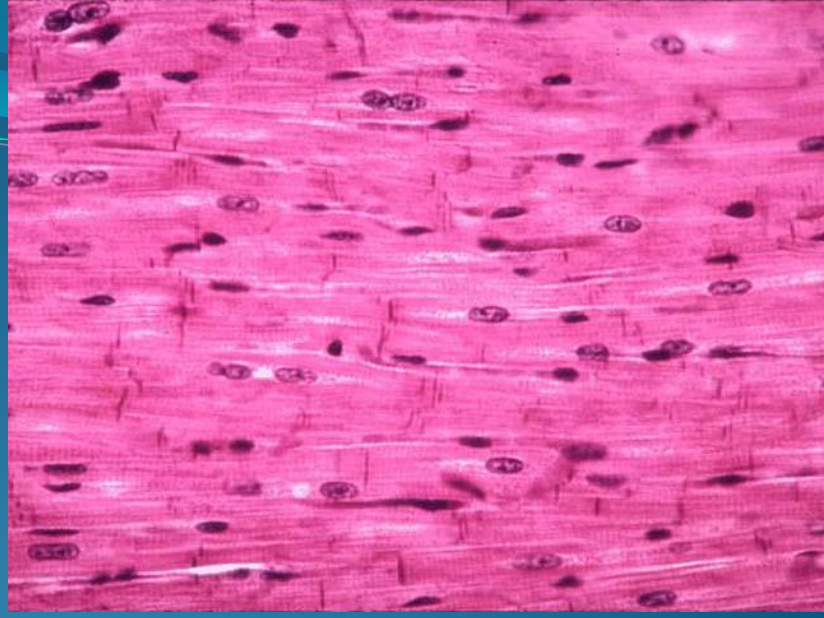


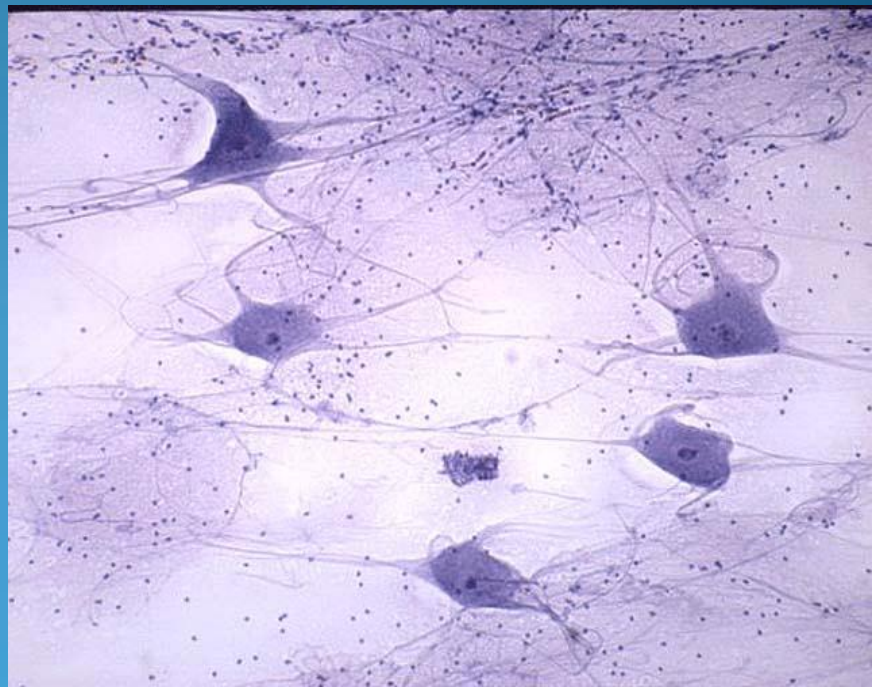


Levels of Organization of Life

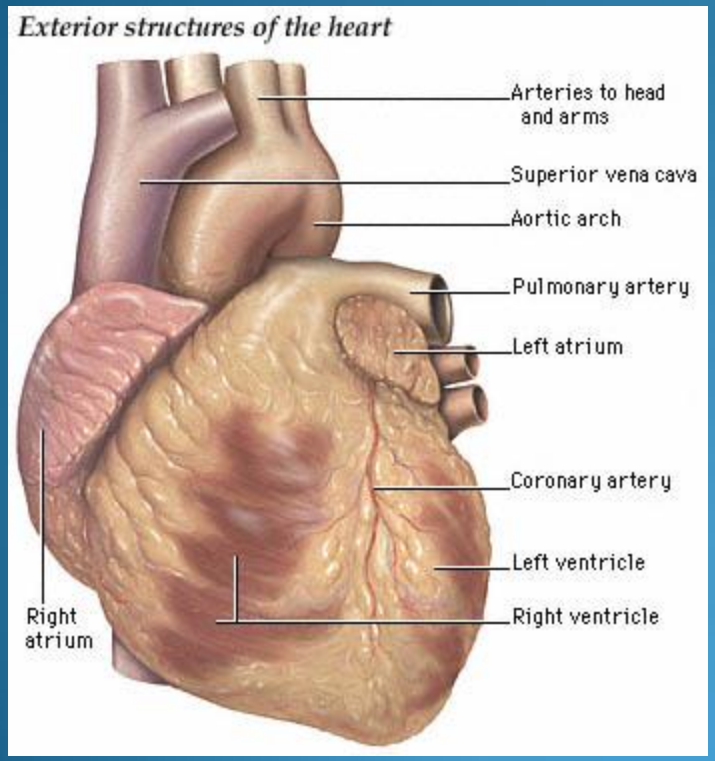
- Tissue – group of cells
- Organ – group of tissues
- Organ system – group of organs

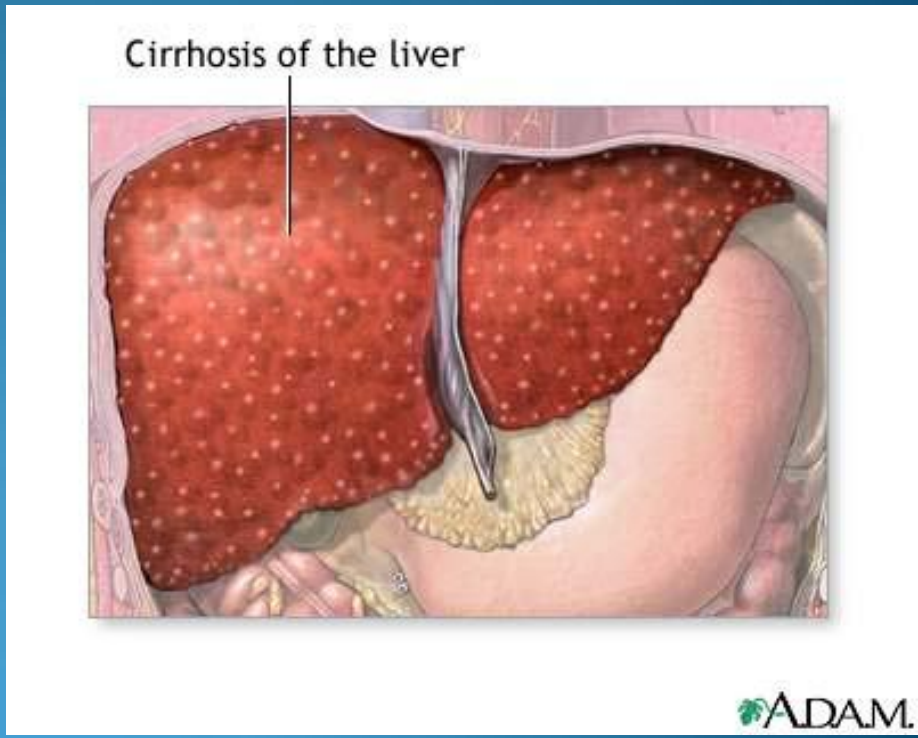
TISSUE



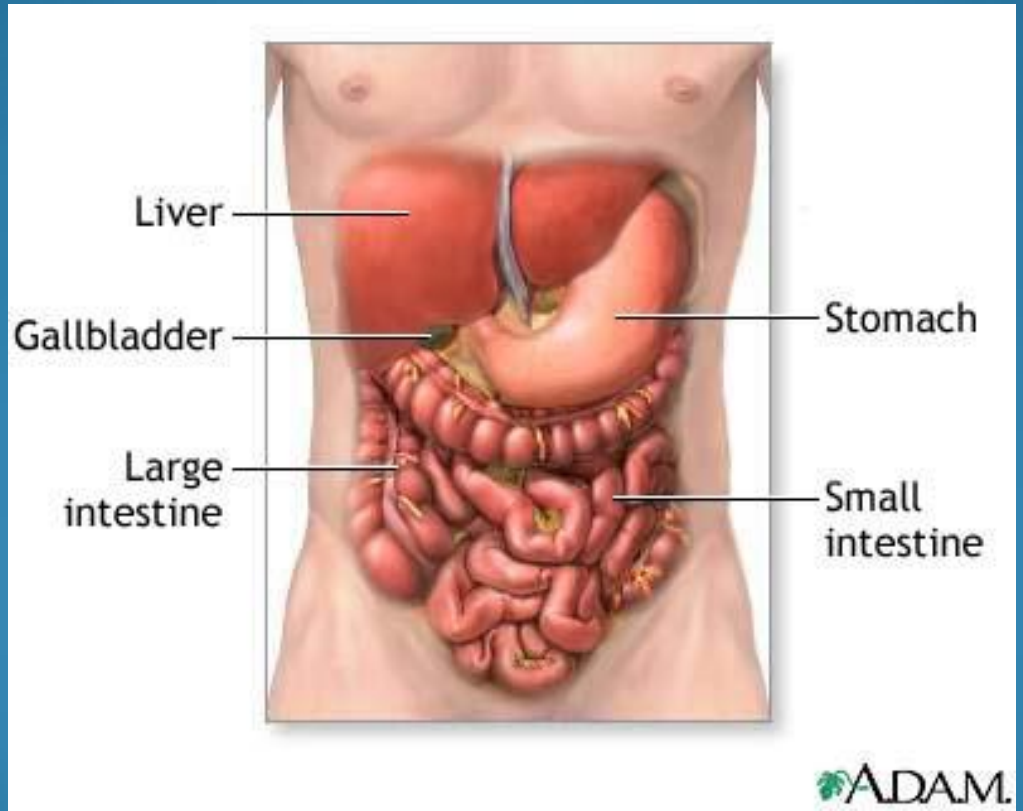


ORGAN


Exterior structures of the heart
Arteries to head and arms
Superior vena cava
Aortic arch
Pulmonary artery
Left atrium
Coronary artery
Left ventricle
Right ventricle
Right atrium


Cirrhosis of the liver
A.D.A.M.

ORGAN SYSTEM



Levels of Organization of Life

- Organism = one living thing
- Population = group of the same species living in the same place at the same time
- Community = all living things in an area
- Ecosystem = all living and nonliving things
- Biosphere = thin volume of Earth and air above that supports life

Additional Vocab

- Biotic = living
- Abiotic = nonliving

ORGANISM

POPULATION

COMMUNITY

ECOSYSTEM

BIOSPHERE