

Bio Exam 1 Review

Properties of Life

- Cellular organization
- DNA
- The ability to take in energy and molecules and use them (=Metabolism)
- Reproduction

Two types of cells

1. **Prokaryotic** - unicellular,
2. **Eukaryotic** - multicellular,

Taxonomic Ranks

Domain, Kingdom, Class, Order, Family, Genus, Species

Biological Organization *for animals*

Communities, populations, organs, tissues, cells

Kingdoms

- Animal
- Plant - photosynthetic, cell walls
- Protozoa
- Etc.

Domains

1. Eukarya - multicellular; plants, animals, fungi
2. Archaea - unicellular
3. Bacteria - unicellular

Archaea and Eukarya are known to be most closely related

Nucleus

- Contains protons and neutrons
- Nucleus is small and dense - protons are mostly empty space

Electrons

- Shells
 - Innermost (full) = 2
 - Outermost (full) = 8

Bonds

- Covalent - electron sharing
- Ionic - electron transferring
- Hydrogen - weak but can form 'bridges' between molecules (ex: water molecules)

Water

- Polar
- Adhesion
- Cohesion - caused by Hydrogen bonding
- High surface tension
- High specific heat
- High heat of vaporization
- Ice floats
- Hydrophobic: water hating (ex: fats)
- Hydrophilic: water loving (polar molecules dissolve in water)

Reactions

- Reactants - on the left, what are reacting together
- Product - on the right, what is being made
- Solute - dissolving
- Solvent - does the dissolving
- Aqueous solution - dissolved in water
- Homogeneous - completely dissolved, uniform (ex: sugar in water)