Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NDHS Per: \_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Biology: An Introduction**

Bio = **life**

Logy = **the study of**

Bio+Logy = **The study of life**

**Characteristics of Life**

1. **Organization**: complex in structure

- Specifically made of one or more cells

**Unicellular** – one cell

Ex: bacteria, amoeba

**Multicellular** – more than one cell

Ex: plants, animals

2. **Utilizes Energy and Matter**:

- must gain energy and matter from some source

1st Law of Thermodynamics: Energy cannot be created or destroyed

**Autotroph** – **self feeders** – make their own food

**Photoautotrophs** – use light

Ex: Plants, algae

**Chemoautotrophs** – use energy from chemicals

Ex: Chemosynthetic bacteria

**Heterotroph** – **other feeder** – take in food from outside of themselves

Herbivore

Carnivore

Omnivore

Detrivore

3. **Grow and develop**

Overtime, groups will change = **evolution**

4. **Reproduction**

**Asexual**: offspring come from one parent – genetically identical (**clones**)

**Sexual**: offspring come from two parents – **genetic recombination**

5. **Respond to the Environment**:

**Taxis** – directed movement

[Chemotaxis](http://www.youtube.com/watch?v=0MtJBP7Ifb8)

Phototaxis

Thermotaxis

6. **Homeostasis**:

- maintain a stable **INTERNAL** environment – fight death

Ex: Thermoregulation

Osmoregulation – salt and water balance

**Biological Hierarchy**

Atoms 🡪

Molecules 🡪

Organelles 🡪

Cells 🡪

Tissues 🡪

Organs 🡪

Organ Systems 🡪

Organism 🡪

Population 🡪

Community 🡪

Ecosystem 🡪

Biosphere