

August 26th, 2014

Biodiversity: Chapter 1

What is Biology? Biodiversity?

- **Biology:** the study of all forms on life.
- **Biodiversity:** The variety of forms of life.

Three Most Important Properties of Life:

1. Reproduction

- **Sexual Reproduction:** Creation of a new organism by combining the genetic codes of two different organisms.
- **Asexual Reproduction:** Creation of a new organism from one parental genetic code.
 - Traits may vary from generation to generation.
 - Some organisms reproduce both sexually and asexually.

2. Energy Utilization/Processing

- **Metabolism:** Total chemical reactions in a cell.
- **Autotroph:** Self feeders off of sunlight (photosynthesis).
- **Heterotroph:** Organisms who use others to get energy (i.e.: Humans eating wheat for energy).
- **Homeostasis:** The ability to keep a more or less constant external environment (i.e.: body temps. For humans and some animals).
 - Some organisms make their own food. I.e.: Trees, flowers, other plants
 - Blood used for energy (Food source. i.e: mosquitos)
 - Plants used for energy (Nectar for bees, horse eating grass)
 - Other animals used for energy (wolf eating a rabbit)

3. Adaptation

1. Changes in the shape and structure of organisms in order to survive in the given environment (i.e.: fish have gills).

Other Properties of Life:

4. Order:

2. Highly organized structures on organisms i.e.: Butterfly wings, flower petals (Symmetry)

5. Growth and Development

3. Cells divide i.e.: stomach lining sheds

Inquiring About Life: Current Real-World Problems

Lake Erie Toxic Blooms (Cyanobacteria)

- Caused by subsurface run off drainage- mainly from farms.
- **Subsurface drain:** Draining water underground into ditches
- One solution is using rain gardens.

Monarch Butterflies

- Big population decrease
- Migration patterns (How do the offspring know exactly where the parents were before they migrated south and how to get there?)