

## V. Natural Selection

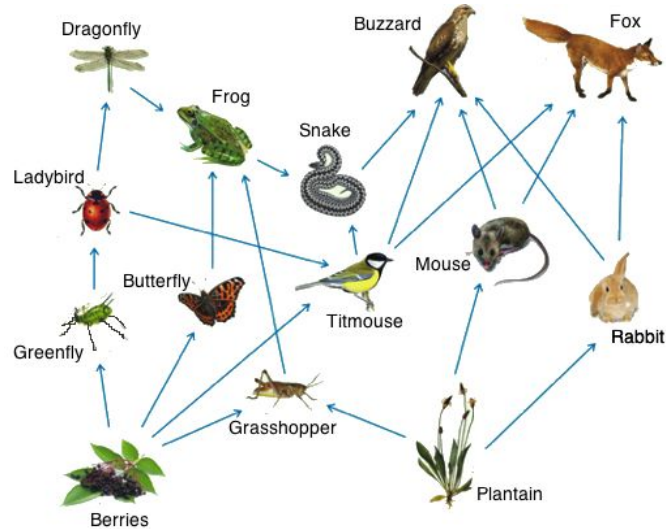
- A. Process by which organisms better suited to environment survive and reproduce more often
1. mutations: changes in DNA that changes how genetic message “appears” in gene (may not always be **physical** appearance)
- B. Variation: Differences that appear in traits within members of a species
1. hair/fur color
  2. size/shape of beaks
  3. aggressiveness
  4. size/shape of leaves
- C. Adaptation: A form of a trait that increases organism’s ability to survive
1. protective coloration
  2. venom
  3. hibernation
  4. thorns

## VI. Matter and Energy Through Ecosystems

- A. Photosynthesis: Process by which producers make their own food
1. photosynthesizers
    - a. plants
    - b. algae
    - c. bacteria
  2. inputs
    - a. sunlight
    - b. water
    - c. carbon dioxide
  3. outputs
    - a. sugar (glucose)
    - b. oxygen
- B. Food chain: simple pathway of food and energy through ecosystem
1. acorn ----> mouse----> owl

## VI. Energy Flow Through Ecosystems continued

## C. Food web: more complex interconnected food chains



## D. Energy flow:

1. Light energy: from sun to plants and other producers.
2. Chemical energy: stored in sugars (first in producers)
3. Thermal (heat) energy: released as organisms break down sugars
4. Mechanical energy: organisms able to use chemical energy stored in food to move and grow

## E. Matter movement

1. Decomposers break down dead organisms. Atoms and molecules recycled in new, growing organisms