

# EVOLUTION

THE UNIFYING CONCEPT OF BIOLOGY  
-A CHANGE IN THE GENE POOL OF A POPULATION OVER TIME-

## PRINCIPLES OF EVOLUTION:

### 1. REPRODUCTION

- Living organisms have the capacity to reproduce
- Only some will survive to successfully reproduce

### 2. NATURAL SELECTION

- Offspring receive traits that made their forbearers successful (reproductive success)
- When the environment changes, nature selects the adaptable (the inadaptable are weeded out)

### 3. GENETIC VARIATION

- DNA is variable and changes from generation to generation
- Mutations (genetic variations) occur spontaneously

### 4. INHERITANCE

- Offspring receive their genetic makeup from their forbearers
- These traits can be observed in individuals and populations

Result in **ADAPTATION** – structures, physiological processes, or behaviors that aid in survival & reproduction in a particular environment

# COMMON MISCONCEPTIONS:

1. Evolution is only a theory & can't be proven
2. Evolution has never been observed
3. Evolution violates the 2<sup>nd</sup> law of thermodynamics
4. There are no transitional fossils
5. Evolutionary theory is based on random chance
6. There is no room for awe or faith in evolutionary theory
7. Evolution says we come from monkeys



# The Evidence Science Demands

- Artificial Selection
- Fossil Record
- Vestigial Structures
- Homologous Structures
- Embryology
- Genetics
- DNA / RNA
- Protein Comparison

