

# Biology 10

Ch 16-4 Notes (p465-473)  
(Evidence of Evolution)

## Evolution

■ **evolution-** \_\_\_\_\_

□ **microevolution:** \_\_\_\_\_

□ **macroevolution:** \_\_\_\_\_

## Fossil Evidence

- Provides much of evolutionists evidence
- Fossils formed when organism is buried by sediments, which prevents bacteria from decomposing
- Hard parts (\_\_\_\_\_, etc) most common
- Other fossils- \_\_\_\_\_, insects trapped in amber, minerals leaching into organism

## Dating Fossils

- Relative age determined by position in rock
  - \_\_\_\_\_
- Radioactive dating methods
  - Carbon 14, Potassium-40, Uranium 238
  - makes use of \_\_\_\_\_ of radioactive material to determine date
    - Carbon 14 has half life of 5700 years
- Using the dating methods above, scientists have pieced together a picture of Earth's past

## Living Evidence for Evolution

- Evidence of common ancestry
  - \_\_\_\_\_ of honeycreepers, Galapagos finches
- Homologous structures
  - **homologous structure-** \_\_\_\_\_

\_\_\_\_\_

■ ex) arm of human, wing of bird

## Living Evidence for Evolution

- Analogous structures
  - **analogous structure-** \_\_\_\_\_

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- ex) wing of bird, wing of insect
  - Vestigial organs

- vestigial organ- \_\_\_\_\_

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- ex) appendix, tailbone, wisdom teeth
  - show relationship with organisms that have fully developed organ

## Living Evidence for Evolution

### ■ Biochemistry

- some of most powerful evidence of relationships
- \_\_\_\_\_ a blood protein, is found in all aerobic organisms
- Variations in cytochrome c indicate how closely related organisms are
- \_\_\_\_\_ provide even more precise relationships

## Living Evidence for Evolution

### ■ Embryological Development

- Early stages of organisms tend to look similar
- Indicates similar genes, similar background
- ex) \_\_\_\_\_ indicate relationship to fish, amphibians

## □ Observing Natural Selection

- We have seen several species adapt to new conditions and change
  - ex 1) \_\_\_\_\_, becoming resistant to drugs
  - ex 2) Peter and Rosemary Grant and \_\_\_\_\_ (see fig 16-18, p473)