

Chapter 13, Lesson 2 Notes

Evidence of Evolution

Fossil Record

- Layers of sedimentary rock form a fossil record.
- Fossils are evidence that species lived long ago. Scientists have found fossils of organisms in layers of sedimentary rock that are similar to modern organisms.
- Scientists can estimate when certain organisms lived. Fossils in lower layers of sedimentary rock lived before species found in upper layers.

Biogeography

- Scientists have found patterns in the way living things are spread out on the earth. This is called biogeography.
- Example 1: kangaroos are found only in Australia. Scientists think they evolved by themselves from animals in other regions.
- Example 2: Animals on the Galapagos Islands were similar to animals in South America. Darwin thought the Galapagos species evolved from animals that came from South America.
- By using biogeography, scientists today have evidence that supports Darwin's observations.

Comparative Anatomy

- Through comparative anatomy, scientists have discovered that even though species look different, their body structures are similar.

- Example: The arm of a penguin, alligator, bat, and human, although different in how they function, are similar in how they are built.

Molecular Biology

- Scientists have found that the DNA of each species is different, but alike. By comparing the DNA sequences with a common ancestor, scientists can see how closely the sequences match. An organism that matches an ancestor is more closely related to it.
- Like the Human Genome Project in which the entire human sequence of DNA has been identified, scientists have also found the sequences of other species' genomes. By comparing these sequences and other evidence, scientists are putting together evolutionary relationships of life on the earth.