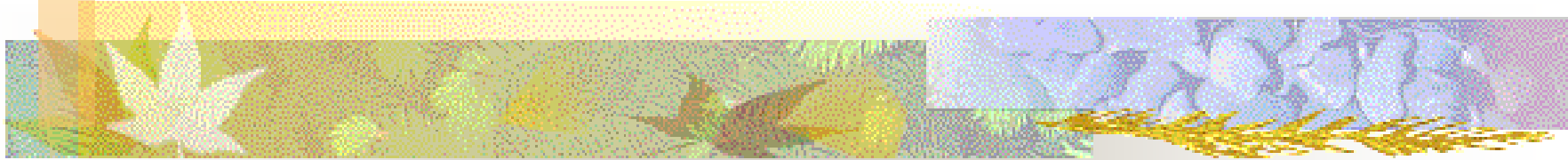


LIFE ON EARTH: AN OVERVIEW





Chapter 17

17.1 – The History and Diversity of Life

- Fossils – remains or traces of ancient life
 - Usually found in sedimentary rock
- Relative Dating – matching rock layers and fossils that were formed at the same time
 - Not very accurate
- Radioactive Dating – radioactive elements break down, or decay, into stable elements at a regular rate. They act like a clock, recording time.
 - Measured in a unit called a half-life
 - Very accurate



■ The Geological Time Scale

- Makes life's long history in Earth more manageable
- Broken down into eons, eras, periods, and epochs

■ Continental Drift

- a geological theory suggesting that continents move slowly over hundreds of millions of years
- Continental drift has influenced the distribution of life on Earth via two significant events
 - Pangaea (formation) – (250 million years ago, end of Paleozoic Era) a super continent, all continents were once connected. Species that were once isolated were brought together.
 - Pangaea (break-up) – (180 million years ago, during the Mesozoic Era)- each continent in effect became a vast island on which species evolved into new forms in isolation from their neighbors.



Extinction of Dinosaurs

- Many scientists theorize that a massive asteroid impact cause the extinction about 65 million years ago
- A layer of iridium rich rock is present at that time all over the world. Iridium is rare on Earth but is very common in asteroids
- Impact site was off northern coast of Mexico's Yucatan peninsula.
- Impact crater is over 9.6 km deep and 300 km wide.
- Estimated speed of impact was 160,000 km/hr
- It is estimated that more than 200,000 km of debris and gases were thrown in to the atmosphere.
- Huge waves raced across the Oceans, causing many tidal waves
- Entire crust was heaved with earthquakes



Background Information

- Tetrapod
 - Literally means four-footed, as in four footed animals, dog etc.
- Hominids
 - Include modern humans and all of our humanlike ancestors
- Monkeys – have a tail and their forelimbs are about the same length as their hind limbs
- Apes – have no tail and their forelimbs are shorter than their hind limbs
 - Apes (gorilla, chimp etc.) are closely related to humans, whereas monkeys are not.



Section 17.2

Finding Order In Diversity

- Classification
 - Identifies subjects and groups them with similar organisms, makes an organization of life (AKA taxonomy)
- Binomial nomenclature – Carolus Linnaeus
 - The second part of a scientific name is the specific epithet, or trivial name, and a species name consists of both the genus and the specific epithet
 - Species epithet is called the species
- Dichotomous key
 - Classification system in which each step divides objects into only two groups



Classification groups

- Kingdom
 - Phylum
 - Class
 - Order
 - Family
 - Genus
 - Species



Six Major Kingdoms

- Achaebacteria
- Eubacteria
 - Archaeobacteria and Eubacteria were formerly grouped as one into the kingdom Monera.
- Protista
- Fungi
- Plantae
- Animalia