Bio study guide evolution

- Evolution – the development of new types of organisms from pre-existing organisms over time
- Cuvier – studied different layers of rock and found that organisms were different in different strata
- Lyell – Went against catastrophin, but believed in uniformationism and thought the earth was millions of years old
- Lamark – thought that the populations changed over time. Was incorrect about inheritance of acquired characteristics
- Malthus – economist who said that the human population is limited by its environment because humans compete for limited resources.
- Darwin – sailed on the HMS beagle to the Galapagos to study species and fossils along the way. On the island, he observed finches with different beaks and concluded that variations in beaks enabled individuals to gather food successfully in their different environments.
- Natural Selection – process where organisms better adapted to the environment tend to survive and produce more offspring.
    1) Overpopulation – each species produces more offspring that an environment can handle
    2) Genetic Variation – each individual has different traits. New traits can appear by random mutations
    3) Competition – organisms will compete with one another for limited resources. Some traits put others at an advantage
    4) Differential Reproduction – Organisms with the best adaptations will live longer. EVOLUTION
- Survival of the fittest – Darwin referred to organisms as being biologically fit. Organisms that are able to live longer and therefore reproduce more
- Fossils – remains or traces of an organism that died a long time ago that let us explore evolution and the time period of that fossil
- Transitional Species – Species that have features that are intermediate between hypothesized ancestors and descendent species
- Biogeography – study of the location of organisms around the world
- Comparative anatomy – study of structures found in living organisms to see how they are related to one another
- Homologous Structure – similar in structure but different in function
- Analogous structures – different in structure which evolved independently to have a similar function because the trait is advantageous
- Divergent evolution – when related species become more different
- Convergent evolution – when unrelated species become more similar
- Co- evolution – when 2 or more species have evolved adaptations due to each others influence
- Vestigial structure – Seem to serve no function but resemble structure with a function in related organisms (Whale pelvis)
- Embryology – Animal embryos all start out looking the same, as they develop they change