**March Notes: Day 2 What is Evolution and who discovered it?**

Name: Period: Date:

**Aim: Do Now: What are these birds and how would you categorize them?**

**What is Evolution?**

* Evolution is a that tries to explain how all living things came to be.
* Evolution’s principles are based on and of living things and their environment, and similar and (proteins & DNA) similarities; then asking: why are there and between organisms.
* Through these it had been that all organisms existing today came from an organism that does exist anymore.
* Evolution states that all the types of species that exist today, started out as 1 specie and (millions of years) into many different types of species.

**Charles Darwin 1809-1882 The Father of Evolution**

* Darwin was a naturalist. When he was 22 years old, he boarded a ship named the *H.M.S BEAGLE* for a 5-year journey.
* On the trip he made observations along many coastlines including the *GALAPAGOS ISLANDS*
* These led to his explanation of how species change over time...*EVOLUTION THROUGH*

**Why where the Galapagos Islands important to study evolution?**

* The Islands are important because, the islands are separated by of from the continent of America, and the islands were also separated from each other. They were .
* This GEOGRAPHIC ISOLATION made the islands a perfect place to observe species to each island (and to the world).
* This meant that all the may have had the same type of organisms living on them, but because of each island’s ,each organism looked and acted differently than the same type of organism that lived on another island.
* Darwin was in the many types of finches found on each of the Galapagos Islands.
* He that each Island had it’s own type of finch.
* The evolution of each different type of was due to the finch's on that particular . Those finches that were better to eat the on that island lived, while those that could not adapt would die out.

**What did Darwin learn from his observations?**

* Darwin made 5 discoveries through his observations.
* 1) - many organisms in a group have similar traits but at the same time they are different from each other. (mutations)
* 2) of Offspring – organisms produce a lot of offspring because they know that some of the offspring will die before reproductive age.
* 3) – organisms may compete for resources (food, water, shelter, mates) causing some to eliminate their competitors or fill specific niches (jobs).
* 4) – those organisms that have the traits ( ) will and be able to . Those that do have these desirable traits will become .
* 5) Change in Traits – due to and changes in the environment, many new genes develop. If the mutation the organism survive, the mutation may be passed to new . But if a mutation chances of survival, the new gene will not be passed on because the organism will die before it can . (done over a long period of time)

**Jean-Baptiste Lamarck**

* 50 years Darwin another scientist had his own idea of how evolution occurred.
* He was the first to attempt to explain how species evolve and change over time.

**Lamarck’s Theory**

* + - * Lamarck believed that when changed, organisms had to change their and to survive.
      * If an organism began to use a part more than they had in the past, that body part would in size during the lifetime of that organism. This is called traits.
      * Lamarck believed if a stretched its neck to reach for high leaves, its neck would get . Its offspring would the longer neck, and continued stretching would make it longer still over several generations.
      * Meanwhile that organisms stopped using would and eventually vanish.
* Unfortunately for Lamarck theory, characteristics are NOT passed on to offspring.
* Because these characteristics do affect your they cannot be .

**Let’s Compare!**

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| **Darwin** | **Lamarck** |
| within species | are shown when they are used |
| of parents genes | Parents can pass on these “ ” traits to their offspring. |
| Only those that are will pass their traits | There was an increasing with in all organisms |
| Species who to pass on their traits will become | There was no such thing as |