**Evolution Guided Notes**

**Evolution= Change Over Time**

**Evolution**

-Individuals DO \_\_\_\_\_\_ evolve! Populations evolve. Evolution occurs at conception when new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of DNA are made. The only role you have left in evolution will be when you have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Jean Baptiste Lamarck (1744-1829)

**3 ideas of Lamarck:**

1. Organisms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to change and better themselves
2. The law of use and \_\_\_\_\_\_\_\_\_\_\_\_
3. The inheritance of \_\_\_\_\_\_\_\_\_\_\_\_\_ traits

Lamarck thought that giraffes have lonf neck because the neck \_\_\_\_\_\_\_\_\_\_\_\_\_ when giraffes tried to reach food. He also thought that this acquired “long neck” would be \_\_\_\_\_\_\_\_\_\_\_\_\_\_ down to offspring.

**Darwin and Wallace: Similar Ideas, Different Places**

**Charles Darwin**

-He voyaged to the Galapagos Islands on the HMS Beagle (1831-1836). He recognized that populations respond (over many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to changes in their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Darwin collected and studied many species of finches. He noticed that they had \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shaped beaks depending on where they lived and what they \_\_\_\_\_\_\_.

**Alfred Russel Wallace**

-He was also voyaging and observing similar things that Darwin was seeing. He sent an \_\_\_\_\_\_\_\_\_\_\_ to Darwin that did not use the term “natural selection,” but described the same \_\_\_\_\_\_\_\_\_\_\_. Darwin published their ideas in a \_\_\_\_\_\_\_\_\_\_\_ on the theory of evolution.

**Darwin’s Ideas**

-Darwin proposed evolution occurred through the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Selection. Natural selection is when individuals who are best suited to their environment \_\_\_\_\_\_\_\_\_\_\_\_\_ and pass down their inherited \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ characteristics.

1. Organisms have more \_\_\_\_\_\_\_\_\_\_\_\_\_ than is needed to replace themselves

2. There is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of traits amongst the offspring

3.. Some of these traits are better \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the environment than others

4. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that possesses these \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traits will survive and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. These \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traits will be passed onto future \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Adaptations**

-A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait that makes an organism more likely or “\_\_\_\_\_\_\_\_” to survive. Traits are controlled by \_\_\_\_\_\_\_\_.

-Mimicry-an individual gains an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by looking like the individuals of a different \_\_\_\_\_\_\_\_\_\_\_\_.

-Camouflage-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in with the surrounding \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Evidence for Evolution**

1. Fossil \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Anatomical evidence
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ evidence
4. DNA
5. Artificial selection

-Fossil record-fossils show \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in organisms over \_\_\_\_\_\_\_\_\_\_

**Anatomical Evidence:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structures-a common \_\_\_\_\_\_\_\_\_\_ that has evolved to perform a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ function. Example: bird wing, human \_\_\_\_\_\_\_\_ and whale fluke all have the same \_\_\_\_\_\_\_\_\_.

Analogous \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-different structures that perform the \_\_\_\_\_\_\_\_\_\_ function. Example: bird wing, grasshopper’s \_\_\_\_\_\_\_\_

**Vestigial Structures**

-A structure that is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in function. Example: snake hips, wisdom \_\_\_\_\_\_\_\_\_\_

**Embryological Evidence**

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the embryos of different species can give clues to evolutionary \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**DNA Evidence**

-Comparing \_\_\_\_\_\_\_ of organisms can show \_\_\_\_\_\_\_\_\_\_\_\_\_\_ relationships, and indicates a common \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Artificial Selection**

-Selective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A breeder selects particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traits in an organism. Examples: dogs, pumpkins, corn etc.