Name _____ Period _____ Date _____

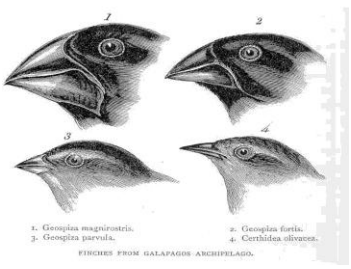
Galapagos Finches

In 1835 Charles Darwin, an English geologist, sailed to the Galapagos Islands aboard the ship the H.M.S. Beagle. Captain Robert Fitzroy was the captain of the H.M.S. Beagle and his mission was to map the coastline of South America for the British Navy. The task took five years. One of their stops included the Galapagos Islands where Darwin collected fossils, animals, and plants to study. He also sketched many of the animals he saw.

On the Galapagos Island, Darwin discovered many different kinds of animals and plants. He found land iguanas on some of the islands, as well as finches, tortoises and hawks. He found that he could identify which island a tortoise came from by looking at the shape of its shell.

The H.M.S. Beagle returned to England with Darwin and all his specimens in 1836. Once back in England, Darwin used these specimens and sketches to develop his theory on how species changed over millions of years to suit their environment. Darwin believed that many birds, reptiles, plants, and other animals of his time were different from their ancestors. That difference was a result of them slowly adapting to the different environments where they lived. His theory is called the Theory of Evolution. This was unsettling for most people and he created quite a stir. Before Darwin's Theory of Evolution people believed the humans, plants and animals had not changed since earth, as we know it, began.

On the Galapagos Islands Darwin found thirteen species of finches. Each island had a different type of habitat and a different type of species of finch. Each species had a different beak shape, but were very similar otherwise. Darwin believed that each of the finches evolved because they had a different type of food on the island on which to feed.



One ground finch had a broad, wide beak that it used for cracking hard seeds. Another ground finch had a long down curved beak, for gathering seed that were in a cactus flower. One finch has a short sharp beak to peck on the neck of seabirds so that it can feed on their blood. Still other finches ate insects, or removed ticks from the necks of tortoises.

After many months of observing all his data, Darwin believed that if an individual in a species had certain traits, i.e. structures or behaviors that allowed it to survive, it would pass on those traits to its offspring. He also saw within the different habitats of the different islands that some of the changes on the islands favored certain individuals within a species and those individuals lived. This process is called natural selection.

Adapted from the Galapagos Conservancy Trust Darwin Fact Sheet

Name _____ Period _____ Date _____

Natural selection (also called "survival of the fittest") means that the organisms who are best adapted to their environment will survive and reproduce.

- Organisms with characteristics that are not helpful in a particular environment are less likely to survive and reproduce. This means that over a long period of time, those unhelpful characteristics may disappear from the species. The organisms who survive have certain traits that helped them live, and those traits might be physical characteristics (like the shape of the beak) or behaviors (like migration).

An adaptation is when a structure or behavior of an organism changes to meet the demands of the environment.

- Structural adaptations are *physical features* of an organism that help it survive and reproduce (shape, body covering, defenses and internal organization)
- Behavior adaptions are *actions* organisms take to survive and reproduce (migration, hibernation)

Check for Understanding:

What are some of the adaptations you saw in the video clip? Are they structural or behavioral adaptations?

Animal	Adaptation	Structural or Behavioral