Aim: Why is their such a great diversity of life on earth?

Do Now:

1. Who was Charles Darwin?

2. What were some of the physical differences he saw in finches?

Homework

Aim: What is evolution?

Do Now: What are some different types of adaptations organisms can have?

Homework Chap 7 p.190- 200

Vocabulary **Look up and define the following:**

Evolution, Daarwin, Lamarck, Natural selection, variation, adaptation, gradualism, puntuated equilibrium, sedimentary rock, fossils, radiometric dating, embryology, Homologous, Vestigial structures

Test Next Tues 2/9

Evolution- changes in inherited characteristics of a species over time

1. **Species**- group of organisms that share similar characteristics an can reproduce among themselves

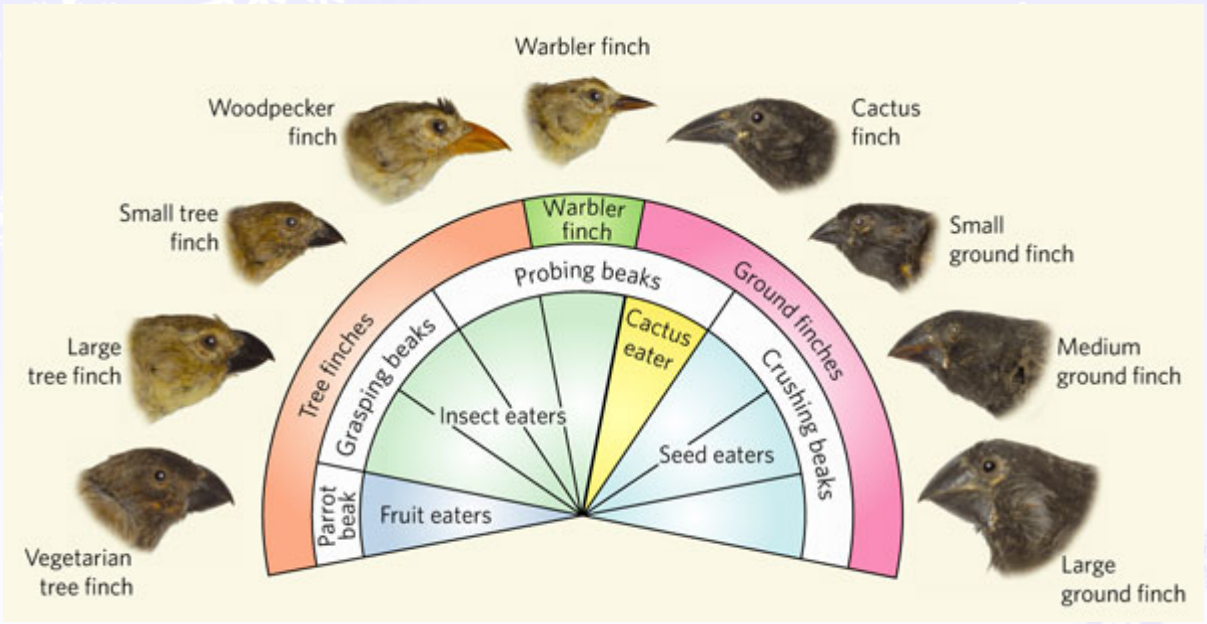
2. **Lamarck (1800's)-** Theory of acquired characteristics was not supported by evidence

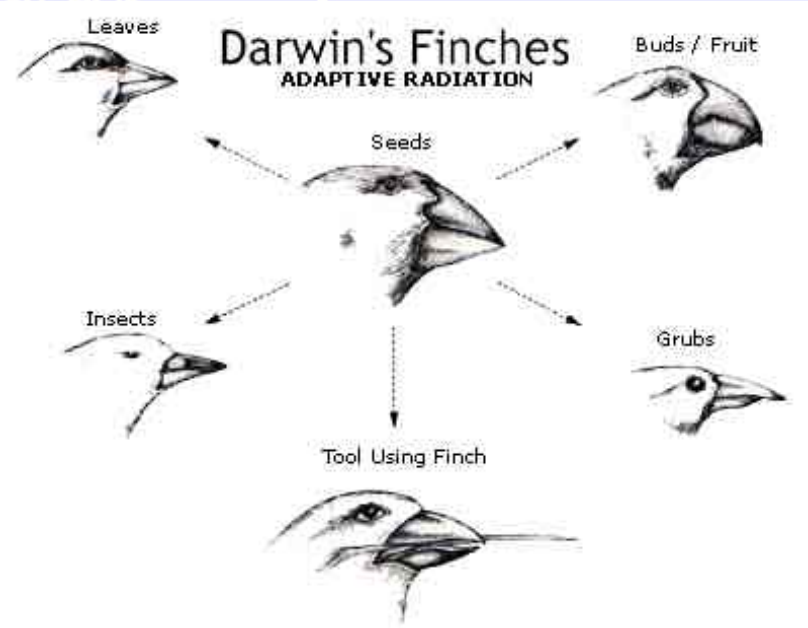
3. Darwin's Theory of Evolution by Natural Selection

a. in the 1850's Darwin ,voyaged on *The Beagle* around the world
- made observations of the natural world & recorded them
- hypothesized that plants & animals on the Galapagos Islands off coast of South America originally came from Central & South America

b. Darwin observed that species of finches on the islands looked similar to mainland finch species
- He reasoned that members of a population best able to survive & reproduce will pass their traits to the next generation
- over time, differences can result in different species

c. Theory of Natural Selection- was developed from Darwin's hypothesis
- organisms best suited to their environment will be more likely to survive & reproduce
- Darwin observed that finches with different beak shapes lived on the different G. Islands- led him to reason that only those finches whose beaks were best suited to the food sources would survive & reproduc on a particular island


Warbler finch
Woodpecker finch
Cactus finch
Small tree finch
Small ground finch
Large tree finch
Medium ground finch
Vegetarian tree finch
Large ground finch
Warbler finch
Tree finches
Grasping beaks
Probing beaks
Cactus eater
Ground finches
Crushing beaks
Insect eaters
Seed eaters
Parrot beak
Fruit eaters



Darwin realized in 1835 that all the finch species arose from one ancestral form that had adapted to a variety of feeding conditions.

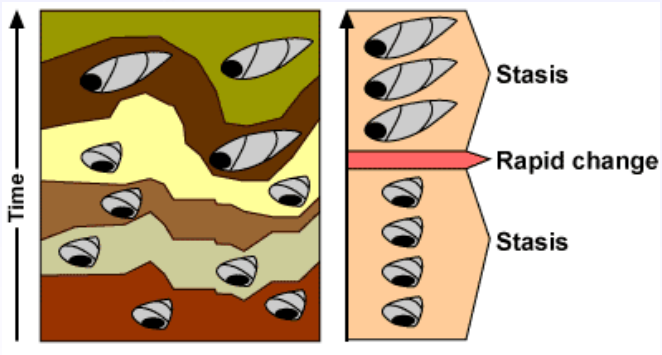
Adaptive radiation- in which one species diversifies into many to exploit a wide range of habit

How fast Does Evolution Take Place?

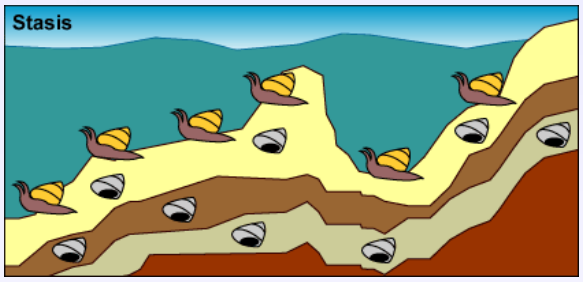
Two models explain the speed of Evolution

a. **Gradualism**- describes evolution as a slow, ongoing process

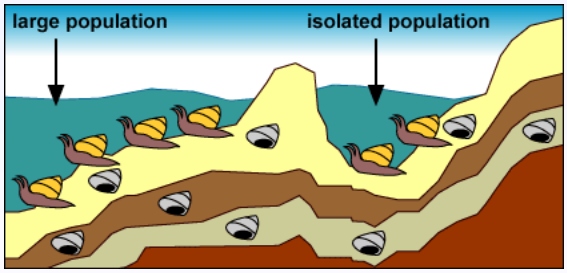
b. **Punctuated Equilibrium**- says thay gene mutation can result in a new species in a relatively short period of time



Stasis: A population of mollusks is experiencing stasis,
living, dying, and getting fossilized every few hundred thousand years.
Little observable evolution seems to be occurring judging from these fossils.



Isolation: A drop in sea level forms a lake and isolates a small number of mollusks from the rest of the population.



Strong selection and rapid change: The small, isolated population experiences strong selection and rapid change because of the novel environment and small population size