**Charles Darwin and the Tree of Life**

1. How could one scientist on the Galapagos Island tell which island a tortoise came from?

The dome of the shell, if the shell had a peak the tortoise came from a drier island (so the tortoise could reach the higher leaves of the vegetation).

(Darwin’s finches)

1. Based on his work in the Galapagos Darwin started to think that species

might not be fixed, but might change over time.

1. The finches that Darwin brought back from the Galapagos varied mainly in

their beaks. These differences related to: diet and the food available, as well as other species present on any given island.

1. Darwin wrote to many animal breeders to ask about their methods and results, because the process they were carrying out was very similar to the process of natural selection.
2. Darwin feared that his theory would cause outrage, so he delayed publishing for many years. How was Darwin’s “hand forced” into publishing?

Alfred Russell Wallace independently came up with the same natural selection theory while working in what is now Indonesia (then the British East Indies). He was in a malarial fever at the time.

1. Wallace came up with the same theory independently as Darwin did, but he lacked what that Darwin had?

20 years of evidence.

1. When was Darwin’s The Origin of the Species published? About how many pages was this “summary (as it was considered by Darwin)?”

November 24, 1859 (400 pages)

1. What caused the most outrage in regards to Darwin’s theory?

The idea that humans were not specificially and separately created by God.

1. Archaeopteryx, the “missing link” between reptiles and birds. The Archaeopteryx has feathers, but teeth and bones in its tail.
2. Hoatzin
3. Mammals and reptiles. (It has fur like a mammal, but lays eggs like a reptile).
4. The uranium decays at a constant rate, which can be used to determine the age of rocks and other objects.
5. The same species (or similar species that descended from a common ancestor) could be found on separate continents. Sea-floor mapping technology added additional evidence.