

Evolutionary Theory in a Nutshell

How Evolution Works:

- 1. Random mutations cause changes, or variation, in a population of organisms.
- 2. These different organisms then compete to survive and reproduce.
- 3. Those which are best able to survive and reproduce do so, and tend to leave the most offspring. This is called "natural selection."
- 4. Over time, if some organisms survive and reproduce more than others, a species will "evolve."

Evolution claims:

- All organisms are related through "common ancestry."
- All organisms arose through the random process of mutation.
- All organisms arose and persist because of unguided natural selection, which can only select for actual beneficial mutations.

The story of evolution:

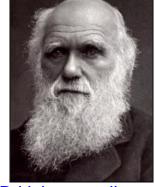
Origin of the Universe → Origin of Earth → Pre-Biotic Synthesis ("primordial soup")

Bacteria ← First Cells ← DNA / Protein World ← RNA World ←

Primitive Animals → Fish → Amphibians → Reptiles* → Mammals

Humans ← Hominids ← Early Apes ← Monkeys ← Lower Primates ←

*Evolutionary theory says some reptiles also turned into birds.



The British naturalist,
Charles Darwin, first
proposed his theory of
evolution in 1859 in *The*Origin of Species. (Picture from
http://www.eeb.lsa.umich.edu/images/darwin.jpg)

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