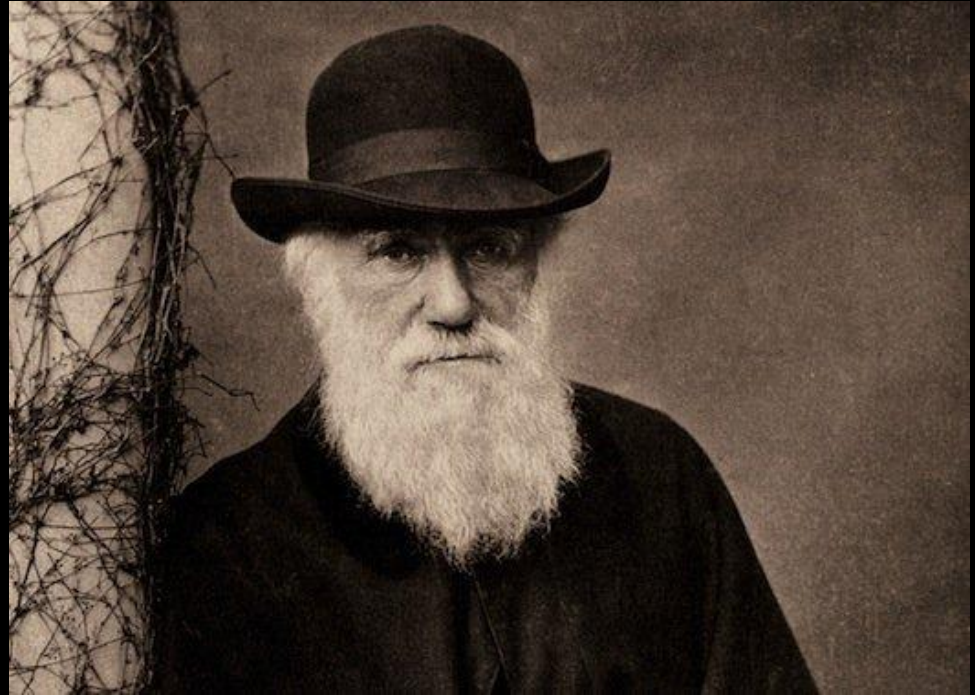
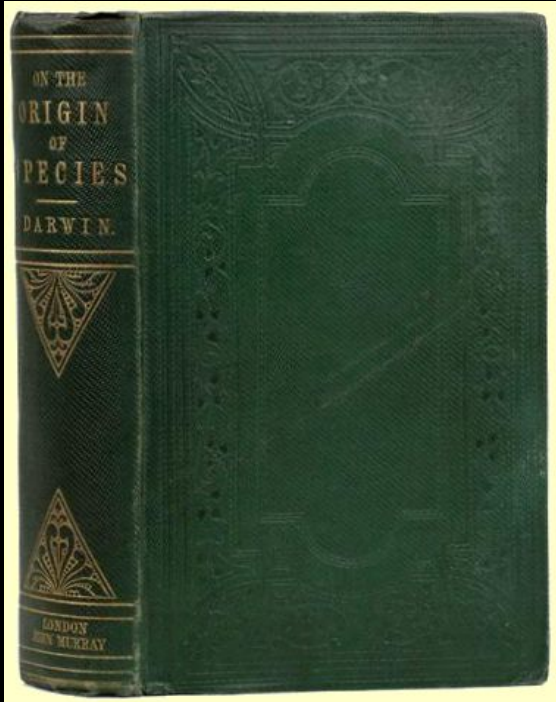


Learning Objectives

- Explain how natural selection is related to species' fitness
- Explain Darwin's theory of evolution by natural selection

On The Origin of Species



In 1859, Darwin published his book entitled *On the Origin of Species*.

The Struggle for Existence



Members of each species compete regularly to obtain food, living space and other necessities of life.

Fitness

Fitness - the ability of an individual to survive and reproduce in its specific environment.



Fitness is the result of **adaptations**

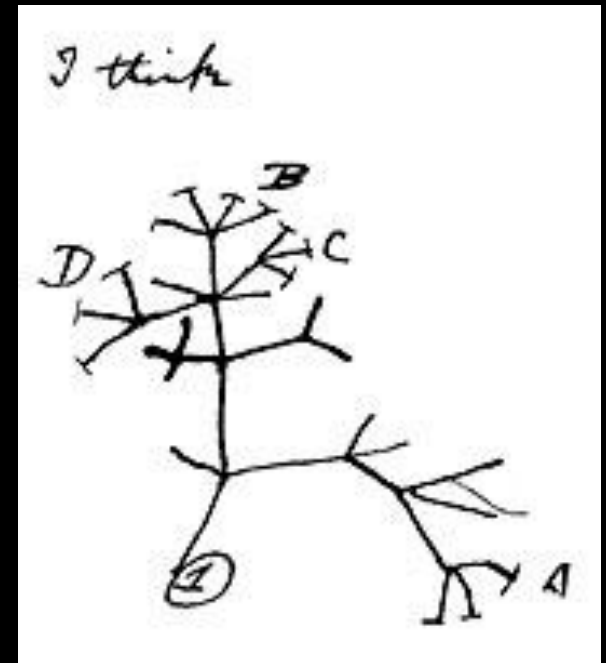
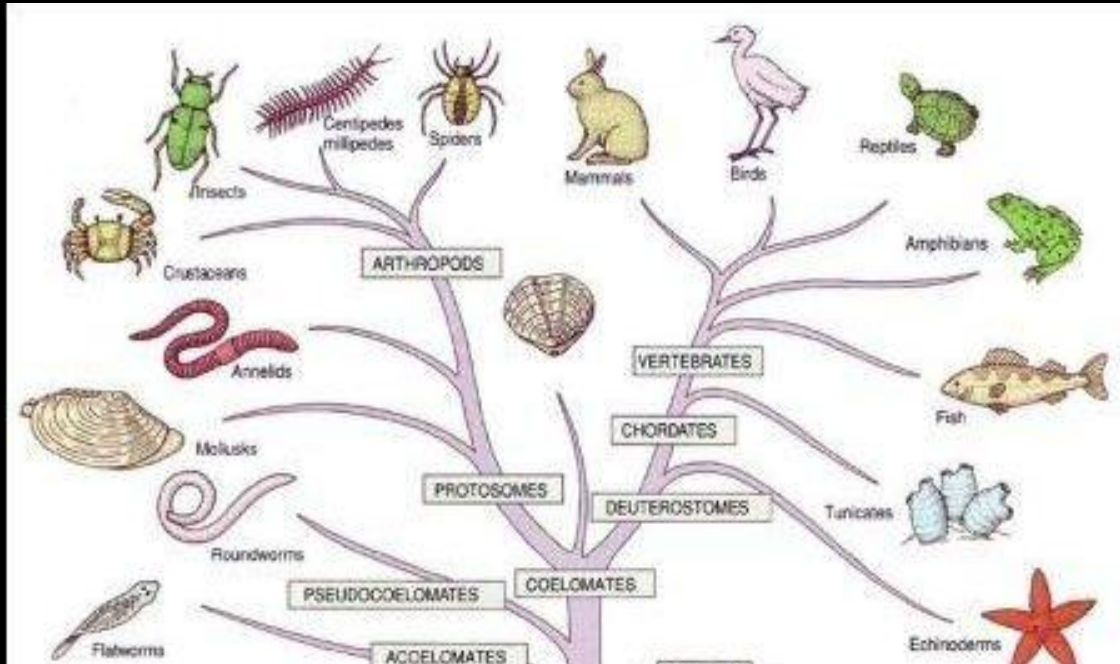
Survival of the Fittest

AKA Natural Selection



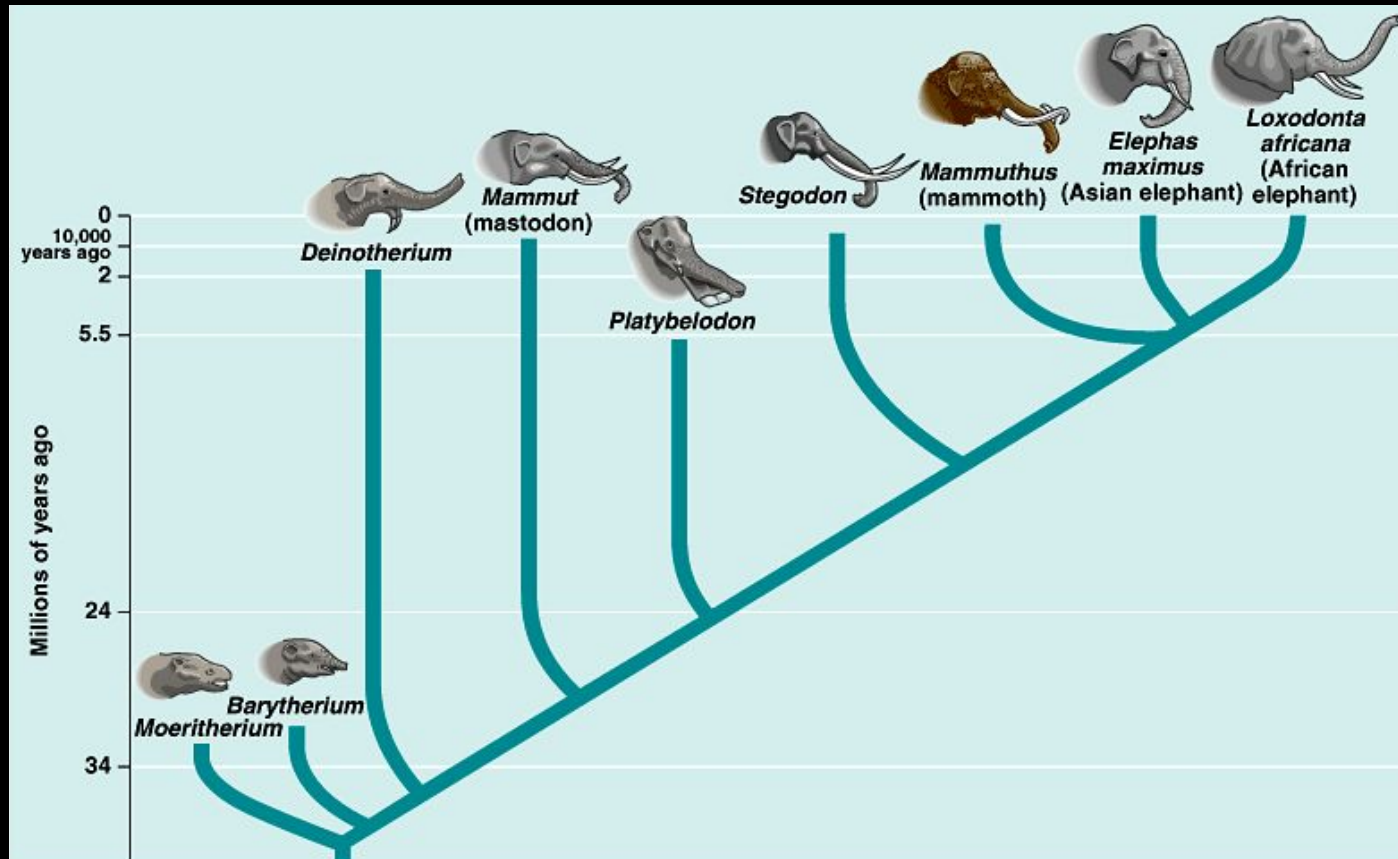
Individuals with characteristics well-suited to the environment will survive and reproduce.

Common Descent



All species, living and extinct, were derived from common ancestors. i.e. tree of life

Descent with Modification



Each living species has descended, with changes, from an ancestor from the past.

What is Natural Selection?

Amoeba Sisters



Stop Here



Inherited Variation vs. Artificial Selection



Inherited variation is passed on through genetics



Breed plants and animals for particular traits