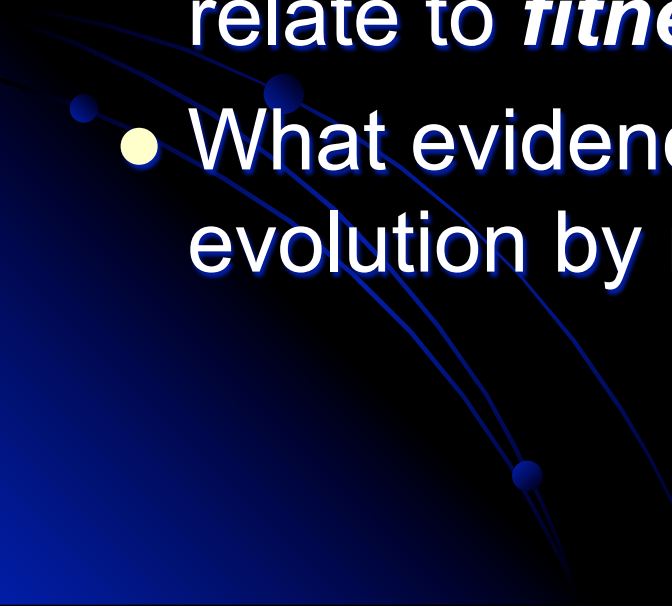
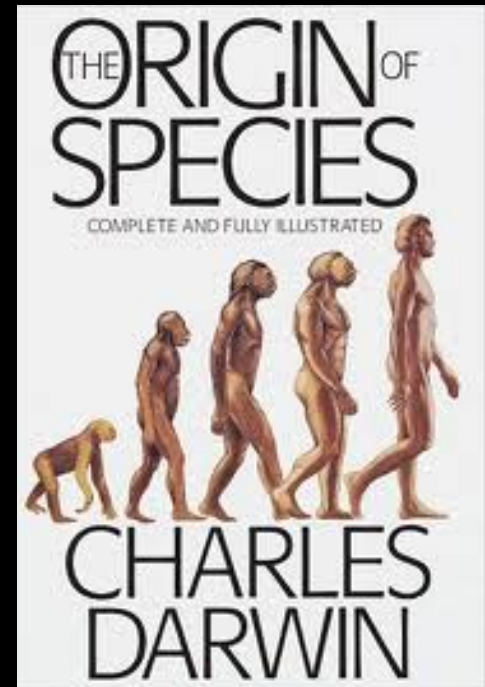


Darwin's Theory of Evolution by Natural Selection

Essential Questions:

- How does *natural variation* relate to *artificial selection*?
 - What is *natural selection* and how does it relate to *fitness*?
 - What evidence did Darwin present for evolution by natural selection?
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- Publication of *On the Origin of Species*
 - 1858: Alfred Wallace
 - Darwin publishes 1859



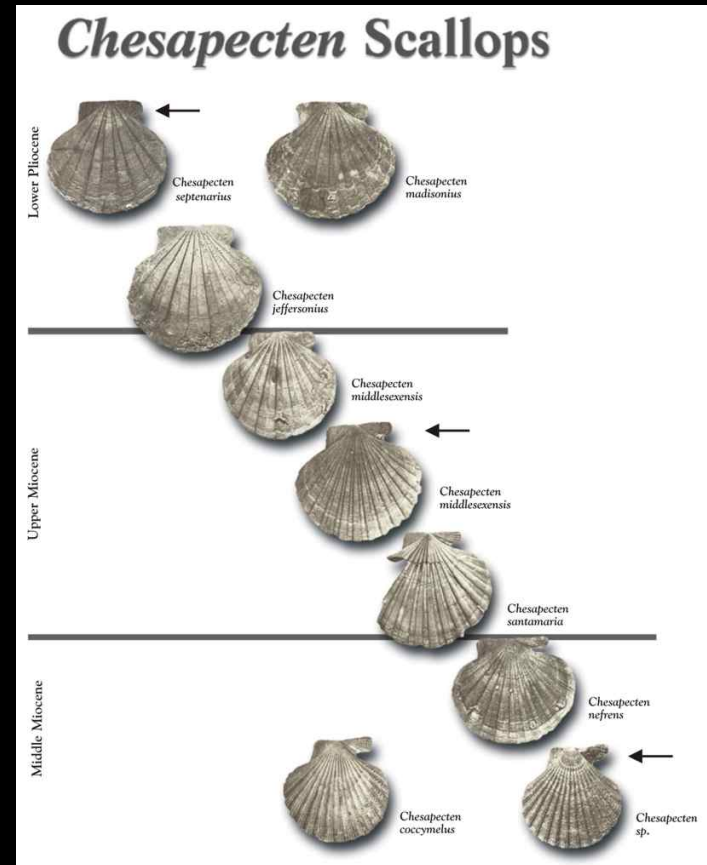
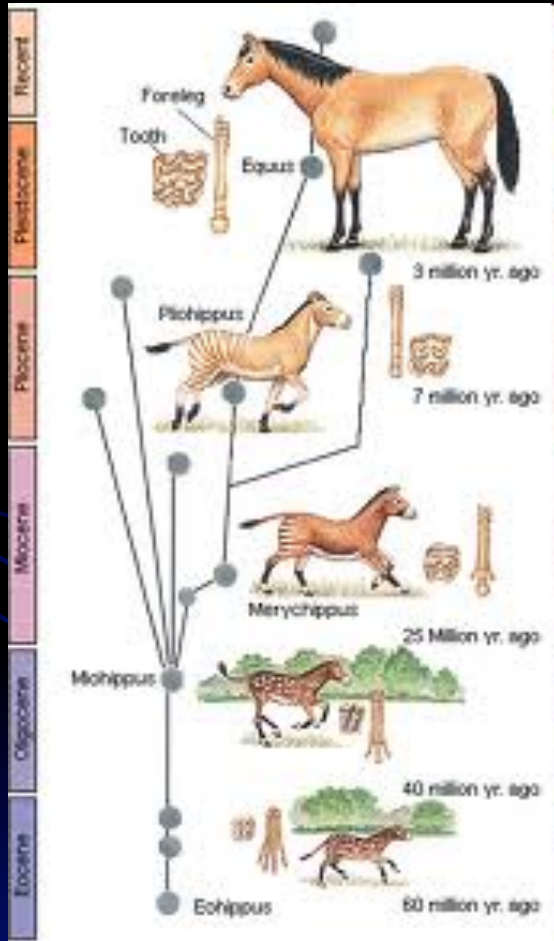
- Natural variation and *artificial selection*



- Evolution by *natural selection*
 - Struggle for existence
 - Survival of the fittest
 - Fitness
 - Adaptation
 - *Natural selection*
 - Descent with modification
 - Common descent



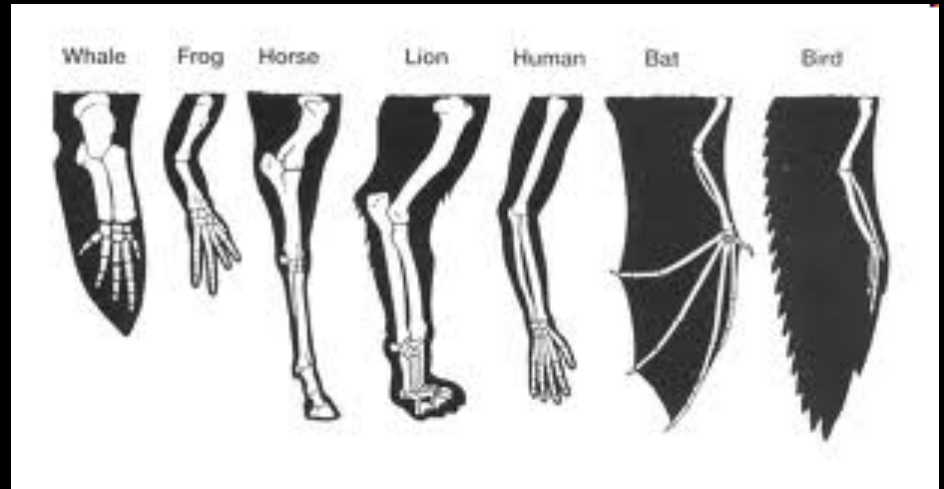
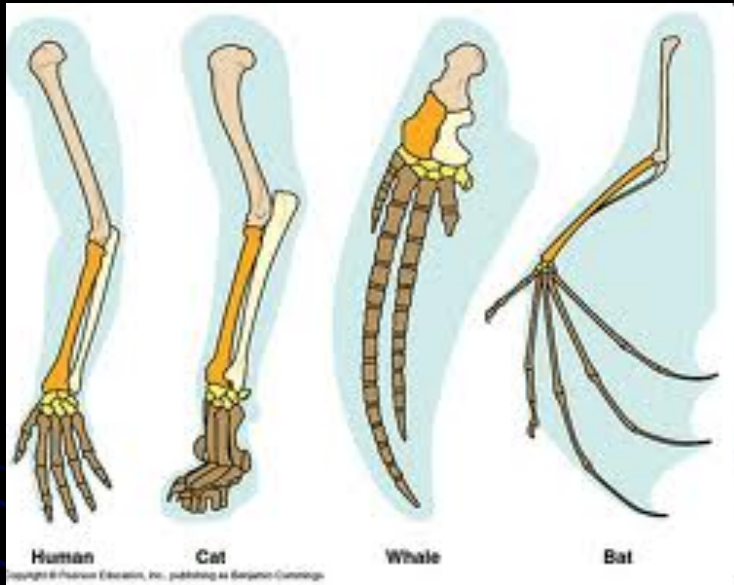
- Evidence of evolution by nat. selection
 - Fossil record



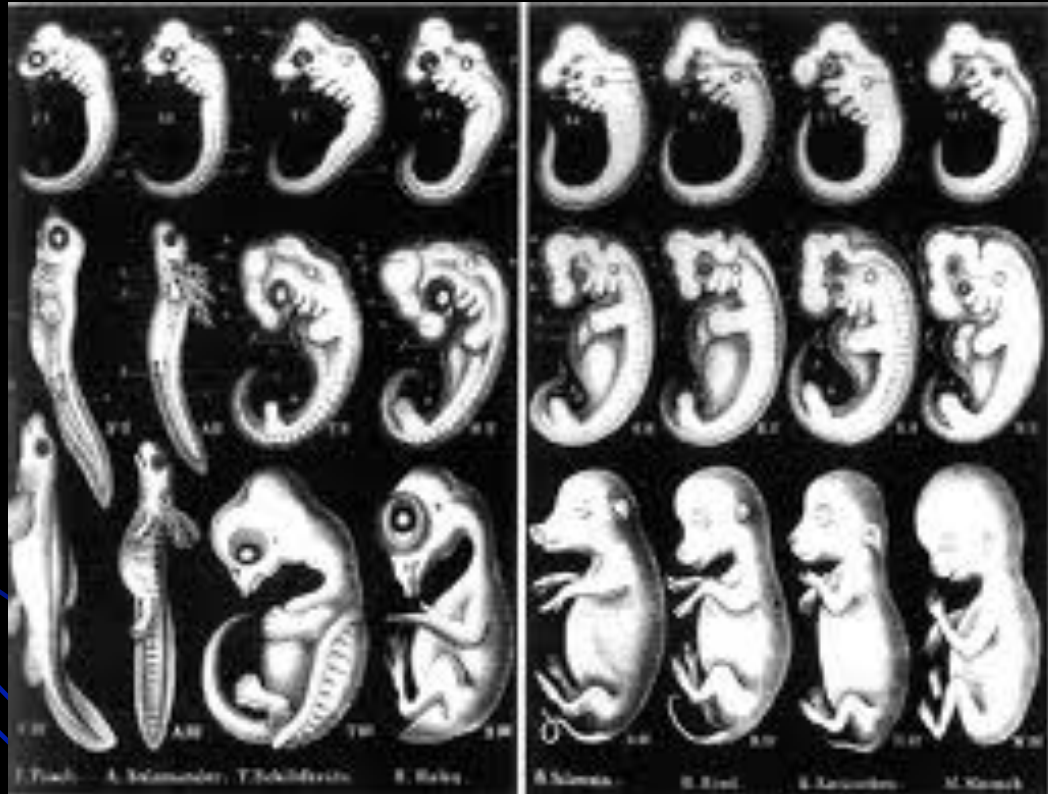
- Geographic distribution of living species



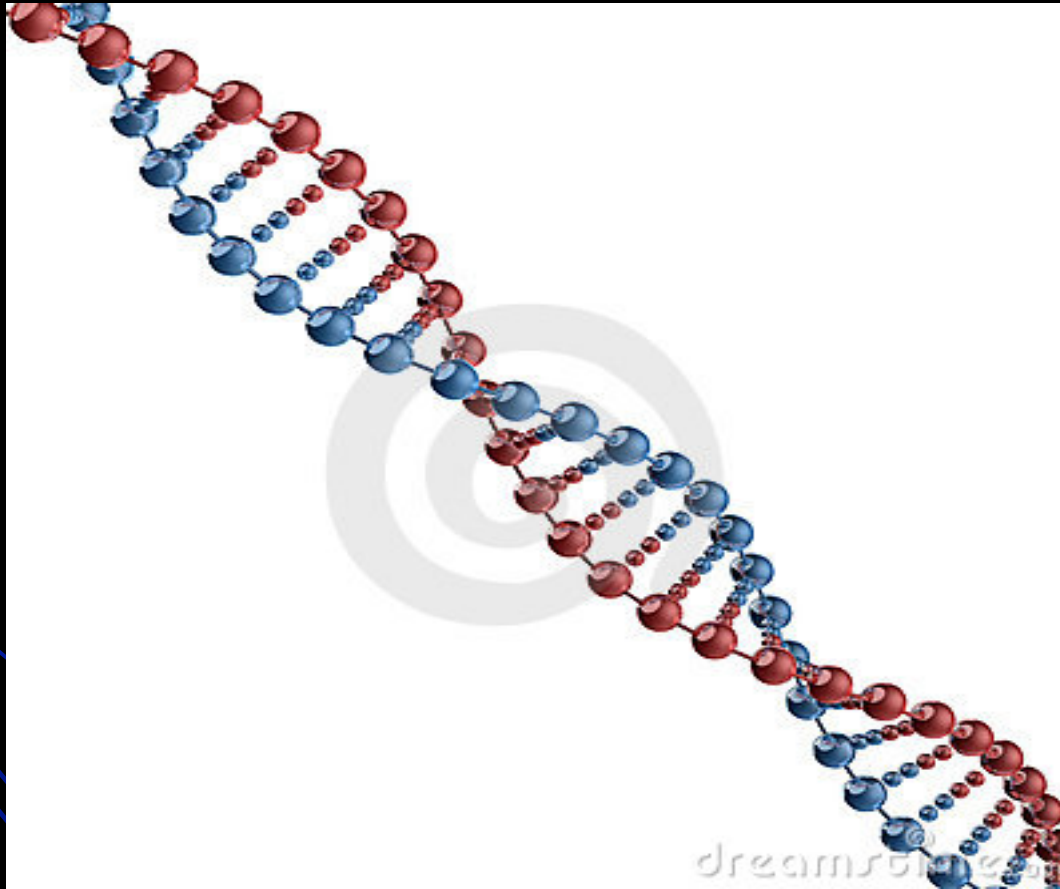
- Homologous body structures



- Similarities in early development



- Evidence since Darwin
 - Comparative biochemistry



● Summary of Darwin's Theory (p. 386)

1. Variation exists
 2. More offspring produced than can survive
 3. Therefore, competition for limited resources
 4. b/c of #1, each org. has advantages & disadvantages in struggle to survive
 5. Most fit individuals survive/reproduce most successfully
 6. Species change over time due to *natural selection*, new species appear & other species disappear
 7. Species alive now descended, with modification, from past species
 8. All orgs. are united in a single tree of life by common descent
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