

HB Study Guide: Theory of Evolution & Natural Selection

5. Evolution and Biodiversity

Central Concepts: Evolution is the result of genetic changes that occur in constantly changing environments. Over many generations, changes in the genetic make-up of populations may affect biodiversity through speciation and extinction.

- 5.1 Explain how evolution is demonstrated by evidence from the fossil record, comparative anatomy, genetics, molecular biology, and examples of natural selection.
- 5.3 Explain how evolution through natural selection can result in changes in biodiversity through the increase or decrease of genetic diversity within a population.

Vocabulary:

- Absolute age-
- Acquired trait-
- Adapt-
- Adaptive advantage-
- Adaptive radiation-
- Analogous structures-
- Artificial selection-
- Biodiversity-
- Biogeography-
- Coevolution-
- Convergent evolution-
- Divergent evolution-
- Embryology-
- Evolution-
- Extinct-
- Fitness-
- Fossil-
- Homologous structures-
- Law of Superposition-
- Mass extinction-
- Natural selection-
- Population-
- Relative age-
- Sediment-
- Stratum-
- Uniformitarianism-
- Vestigial structures-

Answer the following questions:

- How are similarities in macromolecules used to show evolutionary relationships between different organisms?
- How is Lamarck's theory of evolution flawed?
- How is the Law of Superposition used to show evolutionary relationships between different organisms?
- What are (and describe) Darwin's two major theories?
- What are the differences between Coevolution, and Divergent and Convergent evolution?
- What role does the environment play in natural selection?
- Why did Darwin think that the finches he observed and collected on the Galapagos Islands shared a common ancestor?
- Why has there been a burst of evolution after each of the mass extinctions?