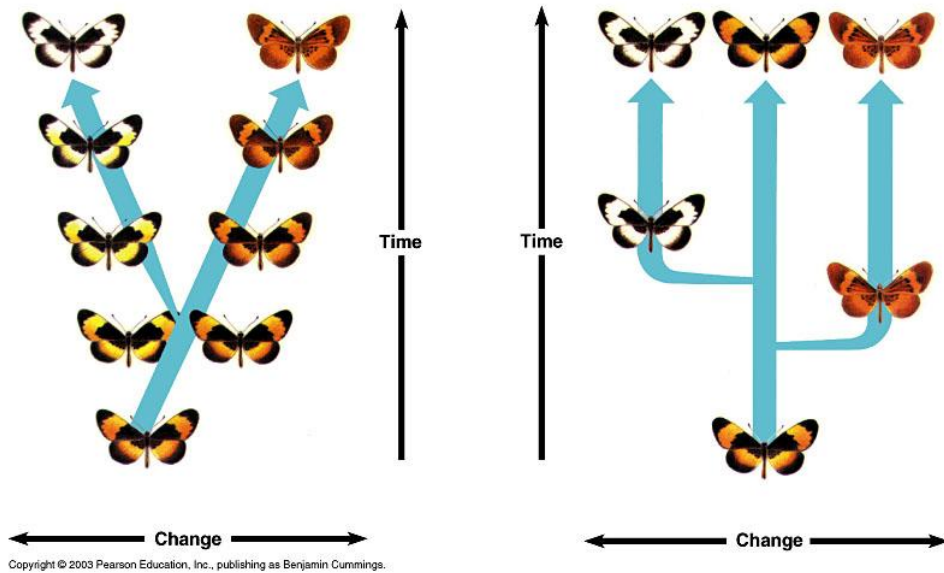


## Chapter 14 - The Origin of Species and Chapter 15 - Tracing Evolutionary History Chapter Reading Guide

### Chapter 14-The Origin of Species

1. Explain how the new underground species of mosquito evolved and how it is different from the above ground species.
2. Describe five types of prezygotic barriers and three types of postzygotic barriers that prevent populations belonging to closely related species from interbreeding.
3. Explain how geologic processes can fragment populations and lead to speciation.
4. Compare the gradualist model and the punctuated equilibrium model of evolution.



Explain which model best explains the fossil record.

5. Describe the work and discoveries of Peter and Rosemary Grant working with Darwin's finches.

### **Chapter 15-Tracing Evolutionary History**

6. Describe the process of continental drift and explain its significance to the history of life on Earth.

7. Describe the process and consequences of plate tectonics.

8. Describe the parameters of *mass extinctions*:

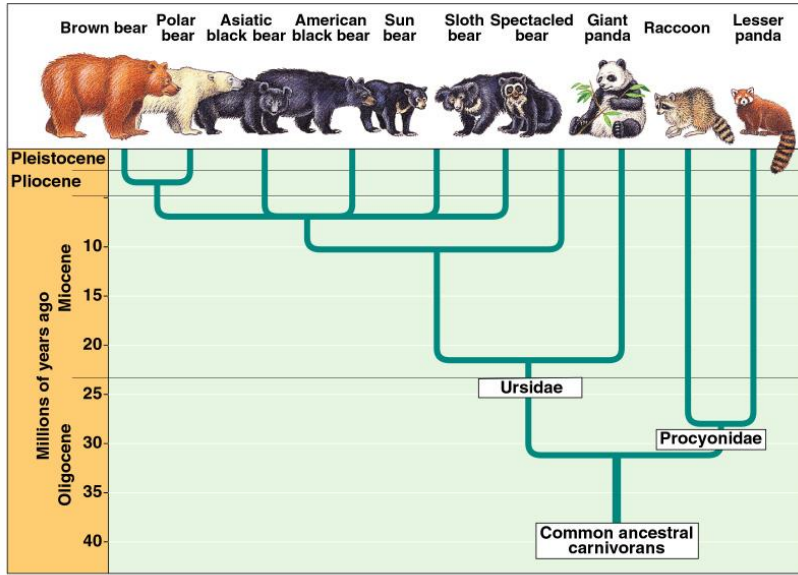
**Causes -**

**Frequency -**

**Impact -**

9. Explain how genes that program development are important in the evolution of life. Also define and describe examples of the process of paedomorphosis.

10. Explain the meaning of the relationships represented by a phylogenetic tree.



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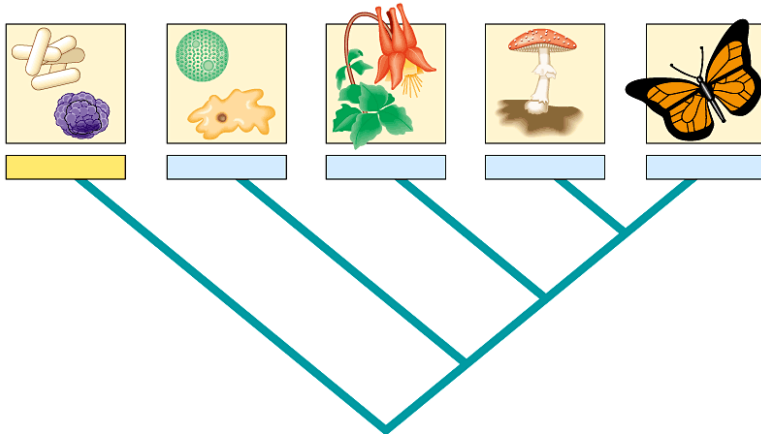
11. Explain the goals of systematics. List in order the progressively broader categories of classification used in systematics.

12. Compare and provide examples of homologous and analogous structures.

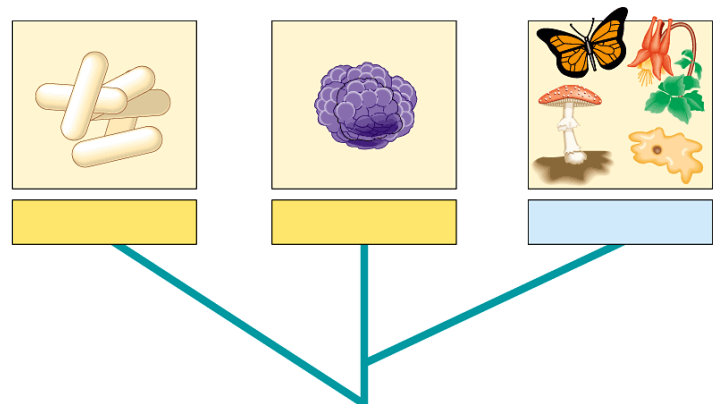
13. Explain how molecular biology is used in systematics. Explain how the results from molecular biology compare to the results from comparative anatomy.

14. Compare the results of systematic studies of amino acid sequences, mitochondrial DNA, and ribosomal DNA. Define a molecular clock.

15. Compare the five-kingdom and three domain systems of classification. Label the drawings below and then using your own words compare and contrast the two systems of classification.



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