**APES- Chapter #7 Guided Reading**

***Biological Diversity***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***Learning Objectives:***

* *How* ***mutation, natural selection, migration and genetic drift*** *lead to evolution of new species*
* *Why people value* ***biological diversity***
* *How people can affect* ***biological diversity***
* *How biological diversity may affect* ***biological production, energy flow, chemical cycling, and other ecosystem processes***
* *What environmental major problems are associated with biological diversity*
* *Why so many species have been able to* ***evolve and persist***
* *The concepts of the* ***ecological niche and habitat***

**Read: Case Study: *The Shrinking Mississippi Delta* on Pg. 113**

1: *Which area of the continental U.S*. has the most coastal wetlands?

2: What is happening to this area? *What is causing these issues?* **Explain.**

3: Why are large rivers like the Mississippi River considered to be *land builders*? **Explain.**

4: **List the organisms** that are affected by wetland loss in the Mississippi River Delta.

5: Why are the Mississippi River Delta issues so **complicated**? *Why are some people opposed to making changes to save the wetlands?*

6: Define ***Biological Diversity***:

7: *Define and explain* the theory of ***Biological Evolution*:**

8: *Summarize* how **mutations** can affect biological diversity:

9: What are the **4 primary characteristics of natural selection** and *explain how it contributes to biological diversity.*

10: Explain how **migration and geographical isolation** can *contribute to the development of new species.*

11: Define **genetic drift** and *explain how it differs* from the other mechanisms of biological evolution.

12: *Define the following*:

* **Genetic Diversity:**
* **Habitat Diversity:**
* **Species Diversity:**
* **Species Richness:**
* **Species Evenness:**
* **Species Dominance:**

13: How many species are alive on Earth today? *Why is this number not easily defined?*

14: Explain the **‘Competitive Exclusion Principle”** using the example of the ***American Gray Squirrel and the British Red Squirrel.***

15: **Explain the concept of *ecological niches*** using the diagram below:



16: *Explain the difference between* a **fundamental temperature niche** and a **realized temperature niche** using the flatworm example.

17: *Explain the concept* of **Symbiosis and obligate symbionts** using the diagram below:



18: What is the difference between **predation and parasitism**? *Explain using examples.*

19: **On T-Chart below**- list the factors that ***tend to increase and factors that decrease biological diversity.***

|  |  |  |
| --- | --- | --- |
|  | Factors that INCREASE diversity | Factors that DECREASE diversity |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |

20: Using the picture below- explain the concept of an ecological gradient.



**Study Questions:**

21: Why do *introduced species* often become **pests**?

22: You are going to conduct a survey of national parks. *What relationship would you expect to find between the number of species of trees and the size of the park?*