**Evolution – Reading Questions**

1. How do each of the following types of biodiversity support healthy ecosystem function:
   1. Genetic diversity –
   2. Species diversity –
   3. Ecosystem diversity –
2. What is the current estimate for the total number of species on Earth, and why is it so hard to get an accurate count?
3. What is the difference between species richness and species eveness?
4. Explain how genetic diversity is created through evolution:
5. In artificial selection, humans induce evolution in a species over time through our actions. What dictates changes in species in the process of natural selection?
6. List 5 organisms and describe the adaptations that increase their fitness in their environment:

**Complete the following chart regarding evolution through random processes:**

|  |  |  |
| --- | --- | --- |
| **Random Processes:** | Description: | Effects on genetic diversity? |
| 1. Mutations |  |  |
| 1. Genetic drift |  |  |
| 1. Bottleneck Effect |  |  |
| 1. Founder Effect |  |  |

1. Describe the process through which allopatric speciation can produce new species.
2. How can sympatric speciation occur if the individuals of a population are not geographically isolated?
3. Why is the rate of environmental change a critical factor in determining whether or not a species can successfully adapt?
4. How do a population’s size and genetic diversity influence its ability to adapt to change?

**Evolution- Vocabulary List**

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| --- | --- | --- |
| **TERM** | **DESCRIPTION** | **EXAMPLE** |
| Species Richness |  |  |
| Species Eveness |  |  |
| Evolution |  |  |
| Mutation |  |  |
| Artificial Selection |  |  |
| Natural Selection |  |  |
| Fitness |  |  |
| Adaptations |  |  |
| Genetic Engineering |  |  |
| Genetically Modified Organisms |  |  |