APES Study Guide 5

**Populations**

This unit will include the study of species interactions and reproductive strategies and how these and other factors affect species diversity. You will also learn a few of the tools that may be used to measure species diversity.

**Textbook References**

Miller, *Living In The Environment,* 16th edition: Chapter 5 (p143-169) (26 pages)

**Outside Reading**

## TBA

**Other Materials**

*Planet Earth*, “Great Plains”

**Vocabulary (39)**

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| species diversity  species richness  species evenness  theory of island biogeography  habitat island  interspecific competition  parasitism  mutualism  commensalism  predation  inhibition  allopathy  facilitation | native species  exotic/introduced/alien species  indicator species  endemic species  ubiquitous species  keystone species  primary succession  secondary succession  early successional species  mid-successional species  late successional species  climax community | resource partitioning  biotic potential  reproductive strategies  survivorship curve  K-strategists  r-strategists  boom and bust cycles  J-shaped growth curve  S-shaped growth curve  population distribution  population density  density-dependent population control  density-independent population control |

**Study Guide Questions (SGQs):**

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| 1. Explain how the role of the American Alligator in its ecological community leads many ecologists to consider it a keystone species.  2. Differentiate between species diversity, species richness and species evenness, and use examples to illustrate each.  3. All over the world, the top predators in food chains are being exterminated. List three species that represent top predators nearing extinction. Explain why this is happening and what affects the loss of a top predator has on an ecosystem.  4. Explain how sea otters influence the abundance of kelp, when they do not feed on kelp, and, in some cases, do not interact directly with kelp in anyway.  5. Explain how the population cycles of a predator and its prey species are related to one another. Provide an example of a predator/prey relationship to illustrate your explanation. | 6. Describe the environmental conditions that lead to primary succession. List the categories of successional plant and animal species, and provide an example of each.  7. After a devastating fire destroys an ecosystem in a chaparral biome. Describe the series of events that will ultimately result in the full recovery of the ecosystem.  8. On a graph of survivorship vs. age, sketch three lines representing the three extremes of population survivorship, identify one organism that exemplifies each extreme and describe the characteristics of each that exemplify their rate of survivorship.  9. List and describe four characteristics of r-strategists and four characteristics of K-strategists. Identify three species that exemplify each reproductive strategy.  10. If the earth undergoes significant global warming in the next 100 years it could favor one reproductive strategy over another. Select the reproductive strategy that you think will be favored, and write an argument that supports your selection. |

APES Calendar

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| ***Monday***  ***October 22*** | ***Tuesday***  ***October 23*** | ***Wednesday***  ***October 24*** | ***Thursday***  ***October 25*** | ***Friday***  ***October 26*** |
| **In Class:**   * Biome Chart * Finish Lab write up   **Handout:**  **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * Review questions chapter 7 & 8   **HW:**   * Finish reading & vocabulary * SGQs 1-5 | **In Class:**   * Review questions chapter 7 & 8   **HW:**   * Finish reading & vocabulary * SGQs 1-5 | **Early Release**  **In Class:**   * Review questions chapter 7 & 8   **HW:**   * Finish reading & vocabulary * SGQs 1-5 | Employee Planning/ School Closed |
| ***Monday***  ***October 29*** | ***Tuesday***  ***October 30*** | ***Wednesday***  ***October 31*** | ***Thursday***  ***November 1*** | ***Friday***  ***November 2*** |
| **In Class:**   * Aquatic Ecosystems 8.1 * Importance of marine aquatic systems 8.2   **Assignments due:**  Climate Lab  SGQs 1-5  **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * Affects of Human activity on marine systems 8.3 * Importance of freshwater 8.4   **HW:**   * read 5 pages * 10 vocabulary | **In-class essay**  **In Class:**   * Humans impact on freshwater 8.5   **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * Grade in-class essay * Unit Review   **HW:**   * Unit Review   SGQs 6-10 | Unit 4 Test **Unit 4 Vocabulary Due**   * **SGQs 6-10 Due** |
| ***Monday***  ***November 5*** | ***Tuesday***  ***November 6*** | ***Wednesday***  ***November 7*** | ***Thursday***  ***November 8*** | ***Friday***  ***November 9*** |
| **In Class:**   * How Species Interact 5.1 * PREDATION Lab   **HW:**   * read 5 pages * 10 vocabulary | **No School**   * Continue   PREDATION Lab  **HW:**   * read 5 pages * 10 vocabulary | Quiz **In Class:**   * How can natural selection reduce competition between species 5.2 * Continue   PREDATION Lab  **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * What limits the growth of populations 5.3 * Continue   PREDATION Lab  **SRQs #1-6 unit 5**  **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * How communities and ecosystems repond to changing environmental conditions 5.4 * Continue   PREDATION Lab  **HW:**   * read 5 pages * 10 vocabulary |
| ***Monday***  ***November 12*** | ***Tuesday***  ***November 13*** | ***Wednesday***  ***November 14*** | ***Thursday***  ***November 15*** | ***Friday***  ***November 16*** |
| **No School**  **HW:**   * read 5 pages * 10 vocabulary | PREDATION Lab Due  Unit Review  **HW:**   * Finish reading & vocabulary   SGQs 6-10 | **In Class:**   * Role humans play on premature extinction   **HW:**   * read 5 pages * 10 vocabulary | **In Class:**   * Preventing premature extiction   **HW:**   * read 5 pages * 10 vocabulary | Unit 5 Test **Unit 5 Vocabulary Due**  **SGQs 6-10 Due** |