Unit 8: **Ecology**

*AP Biology*

| **Big Ideas** | **Class Periods** | **AP Exam Weighting** |
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| EVO; ENE; IST; SYI | 20 Class Periods (Instruction)  2 Class Periods (Summative Assessment) | 10 – 15 % |

| **Day** | **Topic** | **Instructional Activities** | **Homework** |
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| 1 | 8.1: Response to the Environment | **Investigation:** Animal Behavior    **Data Nugget:** To Bee or Not to Bee Aggressive    **Activity**: Bumblebees Won’t Leave |  |
| 2 | 8.2: Energy Flow through Ecosystems | **Case Study:** Monarchs and Milkweed – Energy Cycles in the Biological World    **Case Study:** Building a More Intricate Web – A Reexamination of Trophic Levels    **Investigation:** Energy Dynamics with Owl Pellets    **Investigation:** Microbial Ecology with Winogradsky Columns |  |
| 3 | 8.3: Population Ecology | **Activity:** Turkey Trouble |  |
| 4 | 8.4: Effect of Density of Populations | **Data Nugget:** City Parks: Wildlife Islands in a Sea of Cement. |  |
| 5 | 8.5: Community Ecology | **Case Study:** A Trip to the Beach – Untangling the Mystery of Algal Blooms in the Great Lakes |  |
| 6 | 8.6: Biodiversity | **Case Study:** The Return of Canis lupus?    **Data Nugget:** Bringing Back the Trumpeter Swan |  |
| 7 | 8.7: Disruptions to Ecosystems | **Activity**: Mini-Debates on the Impact of Invasive Species  <https://www.nationalgeographic.com/environment/habitats/invasive-species/>    **Data Nugget:** Invasion Meltdown |  |
| 8 |  | **BR:** Biotic/Abiotic Factors and Food Web  **Activity**: The Habitable Planet |  |
| 9 |  | Activity: Modeling and Measuring Ecosystem Biodiversity - Simpson Diversity Index - Lee |  |
| 10 |  | **BR:** Carbon and Nitrogen Cycles  **Short Film:** Some Animals are More Equal Than Others  **LAB:**  Survival of the Sweetest |  |
| 11 |  | **BR:** Population Growth Equations  **BR:** Competitive Exclusion  **QUIZ:** Ecosystem Ecology |  |
| 12 |  | **Practice FRQ:** Ecology Short FRQs  **Activity:** Turkey Trouble |  |
| 13 |  | **BR:** Population Growth Equations (Sweaks)  **Activity:** Population Growth Simulations  **Practice FRQ:**  Ecolog |  |
| 14 |  | **Practice FRQ:**  Symbiotic Relationships  : Quiz Population/Community Ecology |  |
| 15 |  | **Data Analysis:** Weather and Nesting Success |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  | Final Exam |  |
| 22 |  | Final Exam |  |