**AP BIOLOGY (WHEATLEY)**

**BEHAVIOR AND ECOLOGY UNIT GUIDE 2015**

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| **MONDAY** | **TUESDAY** | **WEDNESDAY** | **THURSDAY** | **FRIDAY** |
| **10/26**  **TEST CORRECTIONS** | **10/27**  \*Animal behavior notes  and discussion | **10/28**  \*Animal behavior lab | **10/29**  \*Animal behavior lab | **10/30**  \*Animal behavior lab –  **full lab report DUE:**  **11/6** |
| **11/2**  \*Population notes and  discussion | **11/3**  \*Survivorship curve  POGIL – **due at the end**  **of the period** | **11/4**  \*Population graph  worksheet – **due at the**  **end of the period** | **11/5**  \*Population virtual lab –  **DUE 11/9** | **11/6**  \*Community notes and  discussion |
| **11/9**  \*Species diversity lab –  **DUE 11/10** | **11/10**  \*Ecological succession  POGIL – **due at the end**  **of the period** | **11/11**  \*Case study | **11/12**  \*Case study - **due at the**  **end of the period.** | **11/13**  \*Nutrient cycles project –  **DUE 11/16** |
| **11/16**  \*Nutrient cycles jigsaw | **11/17**  **TEST REVIEW** | **11/18**  **BEHAVIOR AND ECOLOGY TEST** | **11/19**  **TEST CORRECTIONS** | **11/20** |

Supplemental Resources:

1. Bozeman Science Videos
2. Animal Behavior
3. Behavior and Natural Selection
4. Ecology
5. Ecosystems
6. Populations
7. Ecological Succession
8. Niche
9. Communities
10. R and K selection
11. Crash Course Videos
12. Animal Behavior
13. Population Ecology
14. Community Ecology
15. Ecological Succession
16. Cycles

Reading: Read Chapters 35, 36, and 37 and answer the prompts below.

A. The Scientific Study of Behavior

35.2 Describe the adaptive advantage of innate behaviors. Provide examples of fixed action patterns and note the adaptive advantage of each.

B. Learning

35.5 Explain how bird song development involves innate behavior and experience.

35.7 Define and compare kinesis, taxis, and the use of landmarks in animal   
movements.

35.9 Explain why associative learning depends upon memory.

C. Survival and Reproductive Success

35.12 Define search images and optimal foraging, providing examples of each.

35.14 Explain how courtship rituals are adaptive.

35.15 Compare monogamous and polygamous relationships. Describe the circumstances that would favor each system and provide examples of each.

D. Social Behavior and Sociobiology

35.18 Define a territory and describe the ways in which territories are used, identified, and defended.

35.19 Define agonistic behavior and provide an example. Explain how agonistic   
behavior is adaptive.

35.20 Explain how dominance hierarchies are maintained and identify their adaptive value.

35.21 Define altruism and kin selection and describe examples of each.

35.22 Describe dominance hierarchies and reconciliation behavior in chimps.

E. Population Structure and Dynamics

36.1 Define a population and population ecology. Describe the general type of work performed by population ecologists.

36.2 Define population density and describe different types of dispersion patterns.

36.3 Explain how life tables are used to track mortality and survivorship in populations. Compare Type I, Type II, and Type III survivorship curves.

36.4 Describe and compare the exponential and logistic population growth models, illustrating both with examples. Explain the concept of carrying capacity.

36.5 Describe the factors that regulate growth in natural populations.

36.7 Explain how life-history traits vary with environmental conditions and with population density. Compare r-selection and K-selection and indicate examples of each.

F. **Community Structure and Dynamics**

37.1 Define a biological community. Explain why the study of community ecology is important.

37.2 Define interspecific competition, mutualism, predation, herbivory, and parasitism, and provide examples of each.

37.3 Define an ecological niche. Explain how interspecific competition can occur when the niches of two populations overlap.

37.5 Define predation. Describe the protective strategies potential prey employ to avoid predators.

37.6 Explain why many plants have chemical toxins, spines, or thorns. Define coevolution and describe an example.

37.7 Explain how parasites and pathogens can affect community composition.

37.8 Identify and compare the trophic levels of terrestrial and aquatic food chains.

37.9 Explain how food chains interconnect to form food webs.

37.10 Describe the two components of species diversity. Explain why large fields of a single crop are vulnerable to devastating disease.

37.11 Define a keystone species. Explain why the long-spined sea urchin is considered a keystone species.

37.12 Explain how disturbances can benefit communities. Distinguish between primary and secondary succession.

37.13 Explain how invasive species can affect communities.

G. Ecosystem Structure and Dynamics

37.14 Compare the movement of energy and chemicals within and through ecosystems.

37.16–37.17 Describe the movement of energy through a food chain. Explain why there are more producers than consumers and why eating meat counts as a great luxury.

37.18–37.21 Explain how carbon, nitrogen, and phosphorus cycle within ecosystems.