

Welcome to AP Biology! Congratulations on completing a successful year in science! In preparation of completing this course in a timely manner, you will complete the reading guides below. **This assignment is to be turned in the first day of class in August. Your first exam will assess this information.**

Resources: You have access to the AP Biology text online.

Link: [Campbell-Reece Biology Online](#) or www.campbellbiology.com

Username: gablesbio

Password: gocavs2011

You are allowed to use any credible resource available to you; AP Biology Review Material/Books, Google Images etc.

If any other resource becomes available, we will link them to our individual sites:

Ms. Montgomery – Class Jump

www.classjump.com/spine

Ms. De La Vega- Teacher Web

<http://teacherweb.com/FL/CoralGablesSeniorHighSchool/delaVega/apt7.aspx>

1. Define the following terms:
 - a. Abiotic
 - b. Biotic

2. What do the following subfields of ecology study?
 - a. Organismal ecology

 - b. Population ecology – include the definition of ecology

 - c. Community ecology – include the definition of community

 - d. Ecosystem ecology – include the definition of ecosystem

 - e. Landscape ecology

3. Explain the factors that affect dispersal of organisms.

4. Give two examples of the impact of abiotic factors on the distribution of organism:
 - a. Temperature

 - b. Water

 - c. Sunlight

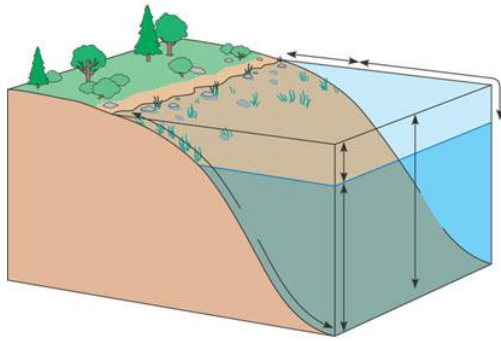
 - d. Wind

 - e. Rocks and soil

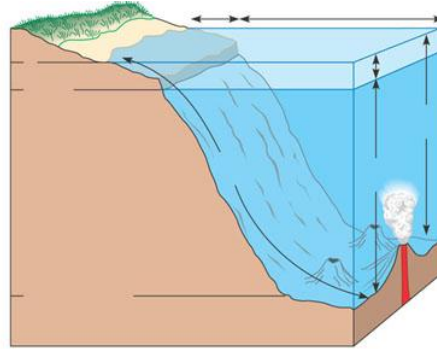
5. How does seasonal turnover in lakes affect the oxygen level available to the aquatic organisms?

6. Label the below listed diagrams of aquatic and marine environments – also include a written description of the zone.

a. Aquatic



(a)



(b)

b. Marine

7. Describe the following aquatic biomes – write enough to use this guided reading as a study guide for the test.

a. Lakes

b. Wetlands

c. Streams and Rivers

d. Estuaries

e. Intertidal Zones

- f. Ocean Pelagic Biome
 - g. Coral Reef
 - h. Marine Benthic Zone
8. How does temperature and precipitation impact the distribution of terrestrial biomes?
9. Construct a table of the major terrestrial biomes (Tropical forest, Desert, Savanna, Chaparral, Temperate grassland, Coniferous forest, Temperate broadleaf forest, Tundra). Your table should include:
- a. Name of each major terrestrial biome
 - b. Area of the world where the biome is located
 - c. Climatic conditions (main abiotic factors)
 - d. Primary types of vegetation
 - e. Primary consumers (list examples of several trophic levels)

Chapter 51

1. What is the focus of:
 - a. Proximate questions of behavior?
 - b. Ultimate questions of behavior?
2. Define the following terms:
 - a. Ethology
 - b. Fixed action pattern
 - c. Sign stimulus
 - d. Imprinting
 - e. Innate behavior
3. Compare and contrast and give specific examples of kinesis and taxis.

4. Describe and give three different examples of animal signals and communication.

5. Define the following terms:
 - a. Learning

 - b. Habituation

 - c. Spatial learning

 - d. Cognitive map

 - e. Associative learning

 - f. Classical conditioning

 - g. Operant conditioning

6. The statement can be made that “there are risks and benefits” to everything.” How does this relate to the optimal foraging theory?

7. What is agonistic behavior?

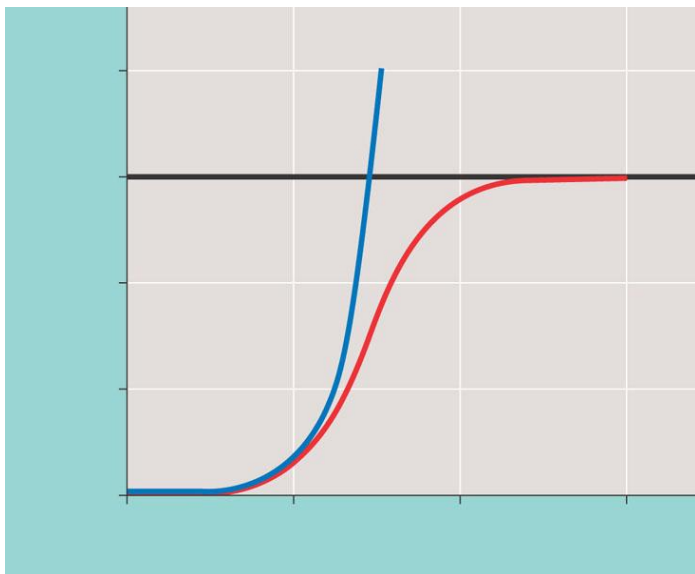
Chapter 52

1. Define the following terms:
 - a. Population
 - b. Density
 - c. Dispersion
 - d. Mark-recapture method

2. Compare and contrast semelparity and iteroparity – give advantages of each as they apply to an example organism – focus on the adaptive benefit of the life history. Are there any disadvantages? **This is a core concept.**

3. What is exponential population growth? What kind of graph would you expect to see?

4. Read section 52.4 slowly – we are not focusing on all of the math but the concepts – explain the logistical population growth model. Studying the graph below – what does it tell you and why? How does “K” fit in to all of this?



5. Compare and contrast r and k selection – **this is a key concept** – do some additional research and try to come up with at least six points of comparison. (ex: r-strategists have many young, k- strategists have few young)

6. What is the difference between density-dependent and density-independent factors as a general term?
7. Describe six density-dependent factors in population regulation.
8. To measure the population density of the chipmunks in a particular park, you sample several plots and capture 50 chipmunks. You mark each of their backs with a small dot of red paint and then release them. The next day, you capture another 50 chipmunks. Among the 50, you find 10 that are marked.
- a. use the mark-recapture formula
 - i.
$$\frac{\text{Number of recaptures in second catch}}{\text{Total number in second catch}} = \frac{\text{Number marked in first catch}}{\text{Total population (N)}}$$
- to estimate how many chipmunks the population contains.

Chapter 53

1. Define interspecific interactions.
2. What is the relationship between interspecific competition and The Competitive Exclusion Principle?

3. Define and give an example of the following physiological defense adaptations.
 - a. Cryptic coloration
 - b. Aposematic coloring
 - c. Batesian Mimicry
 - d. Müllerian mimicry

4. Define and give two examples of mutualism.

5. Define and give two examples of commensalism

6. What is the difference between a food chain and a food web? Which provides a more “full” ecological picture and why?

7. How do you characterize the dominant species? How is this different from the keystone species?

8. Compare and contrast the bottom-up model with the top-down model?

9. Compare and contrast primary and secondary succession.

10. Define evapotranspiration.

Chapter 54:

1. Define the following terms:

Gross primary production:

Net primary production:

2. Many abiotic materials such as water, oxygen, sulfur, carbon, phosphorus, nitrogen, etc. are cycled in nature through natural processes. Humans have impacted this cycling process in many ways.

Construct a concept map for each of these four biogeochemical cycles --- carbon, nitrogen, phosphorus, and water (hydrologic).

- The concept map should include names of all processes involved in the cycle with a BRIEF description of the process (example – *evaporation* from bodies of water).
- The concept map should include how humans are impacting the cycle (example – *deforestation* increasing runoff)