**Chapter 2 Interaction of Living Things (Pages 48-65)**

**Section 1 Everything is Connected (pages 48-51)**

1. What is ecology?
2. What is an organism’s “environment”?
3. Explain the difference between **abiotic** and **biotic** parts of an environment.
4. List 5 **biotic** parts of the environment in figure 1 on page 48.
5. List 4 **abiotic** parts of this same environment.
6. List the 5 different levels of environments.
7. What is a population?
8. What is a community?
9. What is the dependence between populations in a community?
10. What is an ecosystem?
11. What else besides organism interaction do scientists look at in an ecosystem?
12. What is a biosphere?
13. Explain the dimensions of the biosphere.

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary**: All living things are connected in a \_\_\_\_\_\_ of \_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_part of an environment are made up of all the living things found within it. The \_\_\_\_\_\_\_\_\_\_\_\_\_ part of an environment is made up of all the non-living things found within it, such as water and light. An ecosystem is made up of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of organisms and its \_\_\_\_\_\_\_\_\_\_\_\_ environment.

**Before going on to Section 2 complete the Quick Lab activity on page 49 of your notebook**. Be sure to complete steps 1-4 on the even number notebook page across from the Cornell notes for this section.

**Section 2 Living Things Need Energy (pages 52-57)**

1. Organisms are divided into what 3 groups based on how they get energy?
2. What is a **producer**?
3. By what process do organisms make their own food?
4. Name 2 other types of **producers** besides green plants.
5. Name the chief **producer** in a forest.
6. What is a **consumer**?
7. Name 3 types of **consumers**.
8. Explain how these three types of **consumers** differ.
9. What are **decomposers?**
10. What is another namefor **decomposers?**
11. What is a **food chain**?
12. What is a **food web**?
13. Which way does energy move in a **food web?**
14. What is an **energy pyramid**?
15. What is the relationship between energy and the numbers of organisms as you go up the pyramid?
16. Where is the most energy available in the pyramid?
17. What type of energy is stored in the tissues of organisms?
18. Use the gray wolves example on page 56 to explain what will happen if a species is disappears from an ecosystem.

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary:** Producers use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in sunlight to make their own food. Consumers eat \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other organisms to gain energy. \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ represent how energy flows from one organism to another. All \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are important to maintain the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of energy in a food web. Energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ show how energy is \_\_\_\_\_\_\_\_\_\_\_\_ at each food chain level.

**On page 57 in your text, complete the Math Practice along with the energy pyramid drawing on the even numbered page across from your notes.**

**Types of Interactions (pages 58-65)**

1. Name 2 types of interactions with the environment of a community.
2. Why do populations not grow without stopping?
3. Tell me what a limiting factor is and give me an example of one.
4. What is a carrying capacity?
5. Give an example of how carrying capacity works.
6. What is *competition*?
7. What is the source of the competition in Figure 2 on page 59?
8. What is a predator?
9. What are some adaptations that help predators survive?
10. What is a prey?
11. What are some of the adaptations that prey have to help their survival?
12. What is symbiosis?
13. Name 3 different forms of symbiosis.
14. Explain mutualism and give an example.
15. Explain commensalism and give an example.
16. Explain parasitism and give an example.
17. Explain what a *pollinator* is and name several*?*
18. *What are some of the ways a flower can attract a pollinator?*

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary:** Limiting factors in an environment keep a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from growing without limit. Two or more individuals or populations trying to use the same resource is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an organism that eats all or part of another organism. \_\_\_\_\_\_ have developed features such as camouflage, chemical defenses, and warning coloration, to protect itself from predators. \_\_\_\_\_\_\_\_\_\_\_ occurs when two organisms form a very close relationship with one another over time.

Finally, for this chapter:

**On the even numbered page across from these notes diagram or place a photograph of a pet, pest, or organism that you have observed around your home or yard. Detail whether they are a predator or a prey of another animal, or possibly both. Draw arrows to their adaptations both for capturing prey and for their own survival. Title and label your diagram thoroughly.**

**Chapter 3-Cycles in Nature (pages 76-83)**

**Section 1 The Cycles of Matter (pages 76-79)**

1. What is the water cycle?
2. What is evaporation?
3. What is condensation?
4. What is precipitation?
5. What is runoff?
6. What is groundwater?
7. What are two specific things water does to help support an organism?
8. What is transpiration?
9. What is the most common molecule in living things besides water?
10. What is the *carbon cycle*?
11. What process is the basis for the carbon cycle?
12. What happens during photosynthesis?
13. Where do most animals get the carbon and energy they need?
14. How does carbon return to the environment?
15. What is respiration?
16. What are the byproducts of respiration?
17. What is decomposition?
18. Give an example of decomposition.
19. What is combustion?
20. What is released into the atmosphere during combustion?
21. Why is nitrogen important to organisms?
22. What is *nitrogen fixation*?
23. How do organisms other than plants get the nitrogen they need?
24. What organism is necessary to turn nitrogen into usable forms?
25. What other forms of matter on Earth pass through cycles?

 **Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary**: Precipitation, evaporation, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and condensation are parts of the water cycle. Photosynthesis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, decomposition, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are parts of the carbon cycle. In the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_, nitrogen gas is converted into other forms and back to gas again. Many forms of matter on Earth pass through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ may be connected in many ways.

**We will be doing the quick lab on page 78 as a group. We will diagram it on the even numbered page opposite these Cornell notes.**

**Section 2-Ecological Succession (pages 80-83)**

1. What is succession?
2. What is a pioneer species?
3. Explain the steps in secondary succession.
4. Why is *biodiversity* important to a community of organisms?
5. What is a characteristic of *mature communities*?

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the gradual development of communities over time. Often a series of \_\_\_\_\_\_\_\_\_\_\_is observed during succession. Primary succession occurs in an area that was not previously inhabited by \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_; No \_\_\_\_\_\_\_ is present. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes place in an area where an earlier community was disturbed by fire, landslide, floods, or plowing for crops and where \_\_\_\_\_\_\_\_\_\_\_ is present.

**Chapter 4- The Earth’s Ecosystems (pages 92-111)**

**Section 1- Land Biomes (pages 94-101)**

1. What is a biome?
2. Name the 4 classifications of Earth’s land biomes.
3. What are the 3 types of forests and tell me something important that distinguishes one from another.
4. Name 2 types of grasslands and tell me a major difference between them.
5. What are deserts?
6. What is a tundra?
7. What is permafrost?
8. What is a tree line?

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary:** A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is characterized by abiotic factors, such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and biotic factors such as plant and animal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Three forest biomes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ forests. Grasslands are areas where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the main plants. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ grasslands have hot summers and cold winters. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have wet and dry seasons. \_\_\_\_\_\_\_\_\_\_ are very dry and often very hot. Desert plants and animals competing for the limited water supply have special \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for survival. \_\_\_\_\_\_\_\_\_\_are cold areas that have very little rainfall. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the layer of frozen soil below the surface of arctic tundra, determines the kind of plants and animals that live on the tundra.

**Section 2-Marine Ecosystems (pages 102-107)**

1. What covers 3/4ths of the Earth’s surface?
2. What do we call an ecosystem in the ocean?
3. What is plankton?
4. What happens to the temperature of ocean water as depth increases?
5. What are the three ocean temperature zones?
6. How do water temperatures vary in the surface zone?
7. How does temperature affect marine animals?
8. Name the 4 zones that are affected by the amount of sunlight in the ocean.
9. Where is the intertidal zone?
10. What is the neritic zone?
11. What is the oceanic zone?
12. What is the benthic zone?
13. How do animals in the benthic zone get food?
14. What is unique about the organisms that live in the intertidal area?
15. What are *holdfasts*?
16. What is a coral reef made of?
17. What are estuaries?
18. What is the Sargasso sea? Where is it found?
19. What type of animals live on the polar ice?

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary:** Abiotic factors that affect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are water temperature, water depth, and the amount of light that passes into the water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form the base of the ocean’s food chains. Four ocean zones are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_zone, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_zone, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone. The ocean contains unique ecosystems including intertidal areas, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_, estuaries, the Sargasso Sea and polar ice.

**Section 3 Freshwater Ecosystems (pages 108-111)**

1. Name 4 freshwater ecosystems.
2. Name an important abiotic factor in freshwater ecosystems.
3. What adaptations make it possible for the organisms not to be swept away in these ecosystems?
4. What is the littoral zone?
5. What is the open-water zone?
6. What is the deep-water zone?
7. What is a wetland?
8. What is an important aspect of wetlands?
9. The water in wetlands moves deeper into the ground. Why is this important?
10. What is a marsh?
11. What is a swamp?

**Now complete this summary in your notebook below your notes. Fill in the blanks as you go:**

**Summary:** An important abiotic factor in freshwater ecosystems is how quickly the \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_. The three zones of a pond or lake are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone. Wetlands include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Sediments and decaying plants and animal matter build up in a pond. Over time, the pond may fill completely and become a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.