

# Study Guide

## CHAPTER 2

### Section 1: Organisms and Their Relationships

**In your textbook, read about ecology.**

Read each statement. If it describes the study of ecology, write yes. If not, write no.

- \_\_\_\_\_ 1. Ecology is the study of interactions among organisms.
- \_\_\_\_\_ 2. Ecologists mainly study green plants.
- \_\_\_\_\_ 3. Most experiments in ecology are quick and done in a lab.
- \_\_\_\_\_ 4. Models help ecologists control the many variables in their studies.

**In your textbook, read about the biosphere and levels of organization.**

Match the definition in Column A with the term in Column B.

**Column A**

- \_\_\_\_\_ 5. made up of individual organisms of the same species
- \_\_\_\_\_ 6. all nonliving things in an environment
- \_\_\_\_\_ 7. made up of the organisms and nonliving things in an area
- \_\_\_\_\_ 8. portion of Earth that supports life
- \_\_\_\_\_ 9. all living organisms in an environment

**Column B**

- A. abiotic factors
- B. biosphere
- C. biotic factors
- D. ecosystem
- E. population

**In your textbook, read about the ecosystem interactions and community interactions.**

Complete the table by checking the correct column(s) for each interaction.

Interaction	Involves Abiotic Factors	Involves Biotic Factors
10. Commensalism		
11. Competition		
12. Habitat		
13. Mutualism		
14. Niche		
15. Predation		

**CHAPTER 2**

*Study Guide*

**Section 2: Flow of Energy in an Ecosystem**

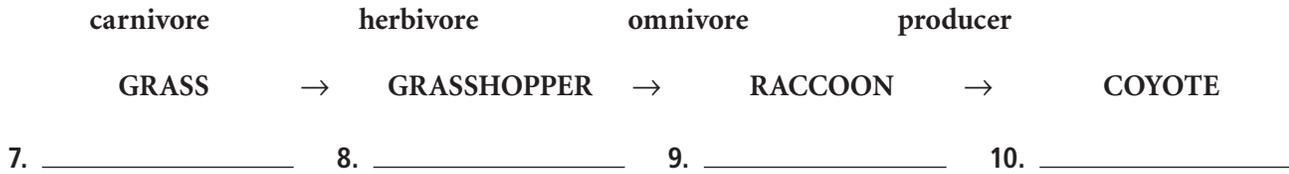
**In your textbook, read about autotrophs and heterotrophs.**

*Match the definition in Column A with the term in Column B.*

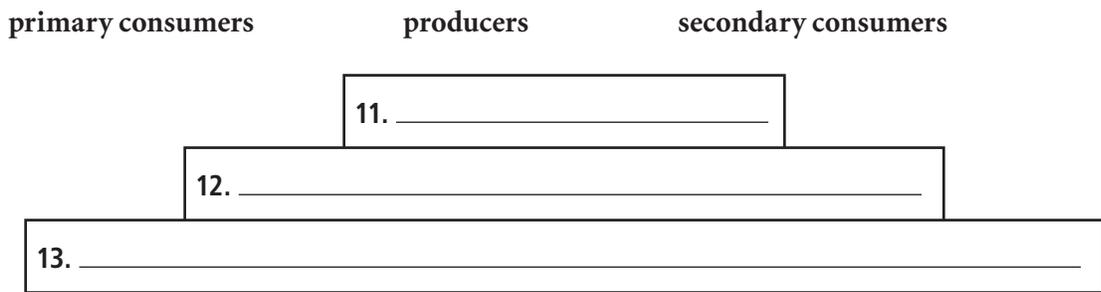
Column A	Column B
_____ 1. get energy by eating other organisms	A. autotrophs
_____ 2. eat both plants and animals	B. carnivores
_____ 3. eat only animals	C. detritivores
_____ 4. collect energy to produce their own food	D. herbivores
_____ 5. eat only plants	E. heterotrophs
_____ 6. eat or break down dead things	F. omnivores

**In your textbook, read about models of energy flow.**

*Label the food chain below to identify each trophic level. Use these choices:*



*Label the ecological pyramid. Use these choices:*



*Respond to each statement.*

**14. Recall** the name for the total amount of living matter in each trophic level of an ecological pyramid.

\_\_\_\_\_

**15. Explain** why an ecological pyramid is smaller at the top than at the bottom.

\_\_\_\_\_

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### Section 3: Cycling of Matter

In your textbook, read about the water cycle.

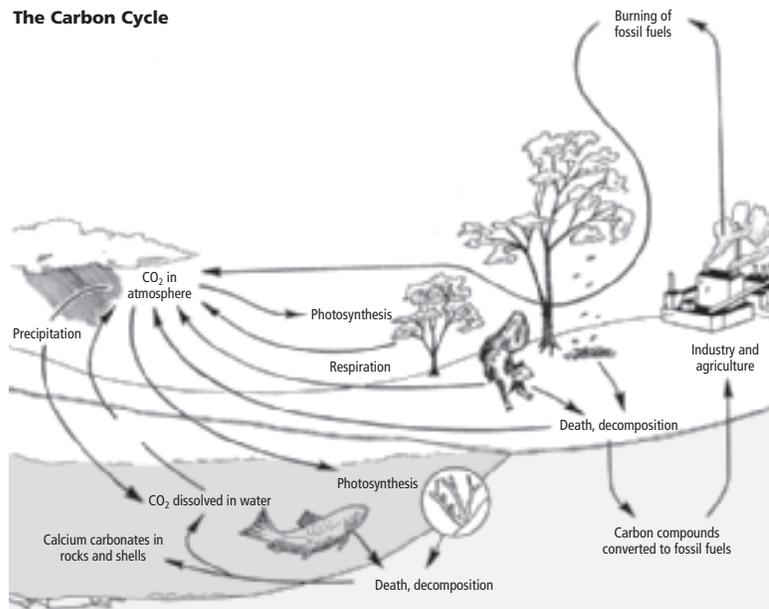
Number the steps of the water cycle in the order in which they occur. Begin with the collection of water in lakes or oceans.

- \_\_\_\_\_ 1. Groundwater and runoff from land surfaces flow into rivers, lakes, and oceans.
- \_\_\_\_\_ 2. Water returns to Earth as rain or snow through the process of precipitation.
- \_\_\_\_\_ 3. Through evaporation, water changes from a liquid to a gas that becomes part of the air.
- \_\_\_\_\_ 4. Through condensation, water in the air changes from a gas to tiny droplets of liquid.

In your textbook, read about the carbon and oxygen cycles.

Refer to the illustration. Use each of the terms below only once to complete the passage.

- |                  |                |             |       |
|------------------|----------------|-------------|-------|
| atmosphere       | carbon         | cycles      | water |
| living organisms | photosynthesis | respiration |       |



(5) \_\_\_\_\_ is a part of all organic compounds, which make up living things. It (6) \_\_\_\_\_ through the environment due to the flow of energy in ecosystems. The carbon cycle is made of several processes, including (7) \_\_\_\_\_ and (8) \_\_\_\_\_. During these processes, carbon moves between its major reservoirs. These major reservoirs include the (9) \_\_\_\_\_, the (10) \_\_\_\_\_, and (11) \_\_\_\_\_.

## Study Guide, Section 3: Cycling of Matter continued

In your textbook, read about the nitrogen cycle.

Use each of the terms below only once to complete the passage.

<b>ammonia</b>	<b>atmosphere</b>	<b>consumers</b>	<b>decay</b>	<b>decomposers</b>
<b>denitrification</b>	<b>nitrogen fixation</b>	<b>plants</b>	<b>proteins</b>	<b>urinate</b>

Nitrogen is a nutrient that organisms need to produce (12) \_\_\_\_\_ .  
 Plants and animals cannot use the nitrogen that makes up a large percentage of the  
 (13) \_\_\_\_\_. The nitrogen is captured and converted into a form that is usable  
 by plants in a process called (14) \_\_\_\_\_. Nitrogen enters the food web when  
 (15) \_\_\_\_\_ absorb nitrogen compounds from the soil and use them to make  
 proteins. (16) \_\_\_\_\_ get nitrogen by eating plants or animals that contain  
 nitrogen. Nitrogen is returned to the soil when animals (17) \_\_\_\_\_ or when  
 organisms die and (18) \_\_\_\_\_. (19) \_\_\_\_\_ break  
 down organic matter found in organisms into (20) \_\_\_\_\_. This compound is  
 changed by organisms in the soil into other nitrogen compounds that can be used by plants. Finally, some  
 soil bacteria convert nitrogen compounds into nitrogen gas, which returns to the atmosphere in a process  
 called (21) \_\_\_\_\_ .

In your textbook, read about the phosphorus cycle.

Label the diagram of the phosphorus cycle. Use these choices:

<b>long-term cycle</b>	<b>new rock</b>	<b>short-term cycle</b>	<b>soil and groundwater</b>
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- 22. \_\_\_\_\_
- 23. \_\_\_\_\_
- 24. \_\_\_\_\_
- 25. \_\_\_\_\_

