

## SECTION | ECOSYSTEMS SUPPORT LIFE.

**1.1 Reading Study Guide A**

**BIG IDEA** Matter and energy together support life within an environment.

**KEY CONCEPT** Ecosystems support life

**Vocabulary**

**ecology** study of how living things interact in an environment

**ecosystem** living things plus their environment

**biotic** living things in an ecosystem

**abiotic** nonliving parts of an ecosystem

**Review**

1. List 4 basic needs of all living things.
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**Take Notes****I. Living things depend on the environment. (p. 9)**

2. Fill in the blanks to complete the paragraph.

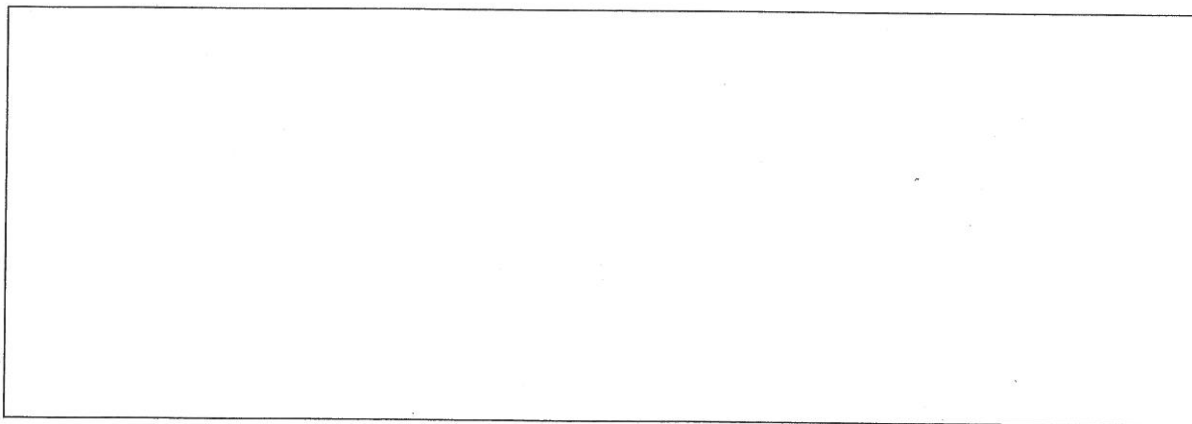
An ecosystem describes a certain environment and all the \_\_\_\_\_ in it. In an ecosystem, all the \_\_\_\_\_ relate to the \_\_\_\_\_.

3. Give two examples of an ecosystem.
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4. Can living things exist without the nonliving parts of an ecosystem? Explain why or why not.
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**II. Biotic factors interact within an ecosystem. (p. 10)**

5. Draw a picture that shows three living, or biotic, factors in a forest.



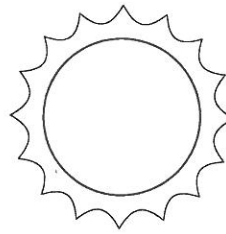
**III. Many abiotic factors affect ecosystems. (p. 11)**

6. Under each picture below, write *biotic* or *abiotic*.



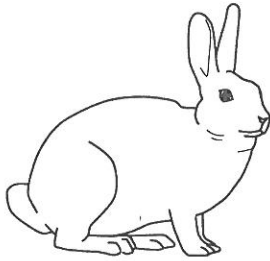
Plant

\_\_\_\_\_



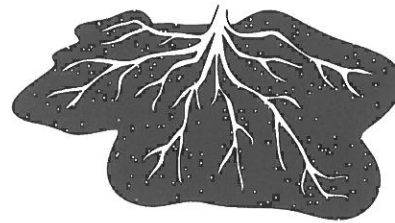
Sunlight

\_\_\_\_\_



Rabbit

\_\_\_\_\_



Soil

\_\_\_\_\_

**A. Temperature, Light, Soil, and Water (pp. 11–13)**

7. List reasons why each abiotic factor is important to living things. Be specific.

	Temperature	Light	Soil	Water
Reasons				

8. Tropical rain forests have many types of living things, while deserts have fewer types of plants and animals. Why?

\_\_\_\_\_  
\_\_\_\_\_

## SECTION

MATTER CYCLES THROUGH ECOSYSTEMS.

**1.2 Reading Study Guide B****BIG IDEA** Matter and energy together support life within an environment.**KEY CONCEPT** Matter cycles through ecosystems.**Review**

Temperature, light, soil, and water are important nonliving, or abiotic, factors in ecosystems.

**Take Notes****I. All ecosystems need certain materials. (p. 16)**

1. What are the three most important cycles in ecosystems?

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**II. Water cycles through ecosystems. (p. 17)**

2. Fill in the combination notes to describe the water cycle that takes place in Earth's ecosystems.

Notes	Sketch to Explain
Precipitation...	
Evaporation...	
Condensation...	

3. How do living things contribute to the water cycle?

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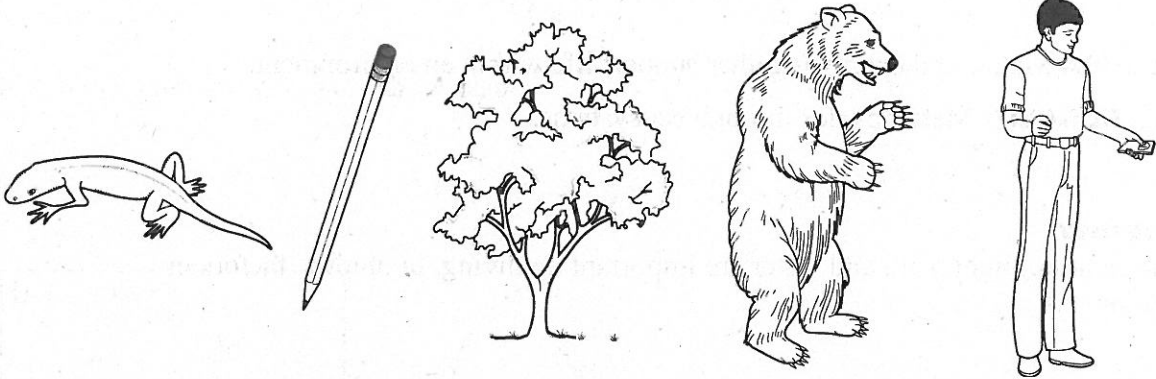
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**III. Carbon cycles through ecosystems. (p. 18)**

4. Circle the objects below that contain carbon.



5. Fill in the combination notes to describe the carbon cycle.

Notes	Sketch to Explain
Plants take CO <sub>2</sub> gas from air...	
When animals eat plants they use CO <sub>2</sub> ...	
CO <sub>2</sub> is released when...	

6. Describe how plants and animals have become fossil fuels.

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**IV. Nitrogen cycles through ecosystems. (p. 19)**

7. Describe the role that bacteria play in the nitrogen cycle.

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**SCIENCE FACT:** Water travels in an endless cycle. It evaporates from puddles, lakes, and seas. It forms clouds and then falls to earth as rain, snow, sleet, or hail. Then it evaporates again. Some of the water absorbs into the ground and is stored there in underground streams and springs.

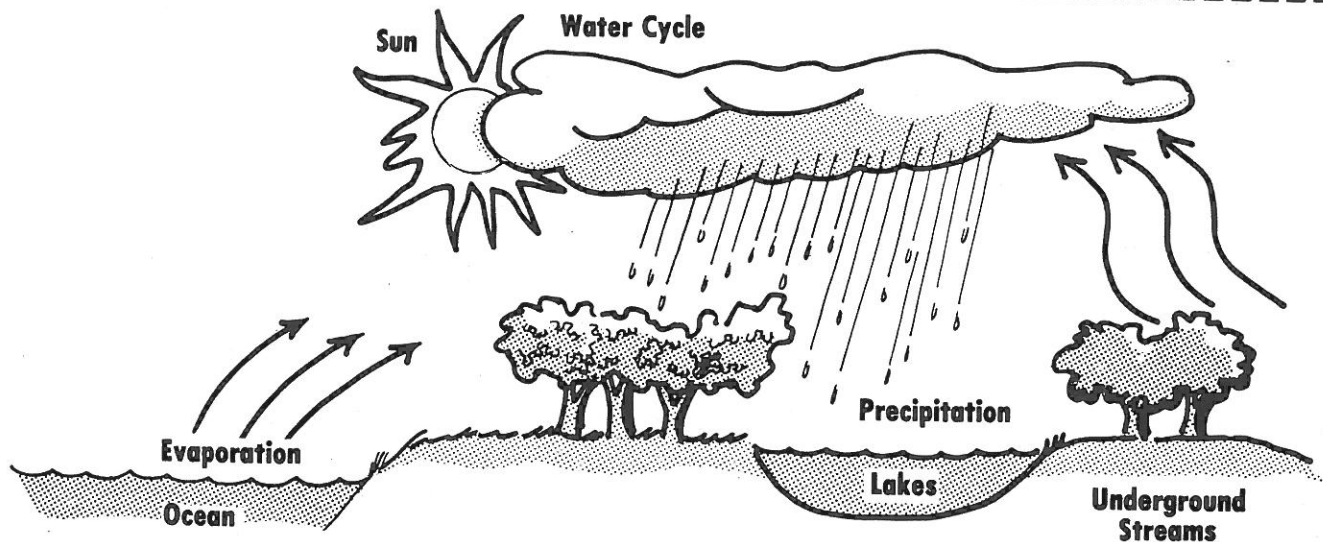
### A Fill in the blanks.

1. Water travels in a cycle.
2. The sun evaporates water.
3. The ground \_\_\_\_\_ water.
4. Water falls to the earth in the form of \_\_\_\_\_.
5. The earth has more \_\_\_\_\_ than land.
6. The \_\_\_\_\_ are really water vapors.
7. The ground \_\_\_\_\_ water.
8. Rivers empty into the \_\_\_\_\_.
9. Snow is a \_\_\_\_\_ state of water.
10. Evaporation occurs during \_\_\_\_\_ hours.
11. Water cycles are \_\_\_\_\_ for all life.
12. Springs come from \_\_\_\_\_ the ground.

<b>ANSWER BOX</b>
absorbs
sun
cycle
clouds
water
precipitation
frozen
ocean
stores
underneath
necessary
daylight

### B True or False

- 1. Water travels in an endless cycle.
- 2. Precipitation does not play an important part in the water cycle.
- 3. Air currents help distribute water.
- 4. The sun's rays do not evaporate water
- 5. Nothing could live without water.
- 6. Water could be distributed without a water cycle.
- 7. Some animals can go for weeks without water.
- 8. Water is distributed equally over the earth by water cycles.
- 9. Some areas get more water than others.
- 10. Water is a compound.
- 11. Water is expressed in the chemical formula H<sub>2</sub>O.



## SECTION ENERGY FLOWS THROUGH ECOSYSTEMS.

**1.3 Reading Study Guide B****BIG IDEA** Matter and energy together support life within an environment.**KEY CONCEPT** Energy flows through ecosystems.**Review**

Matter cycles continuously through an ecosystem.

**Take Notes****I. Living things capture and release energy. (p. 22)**

- Besides matter, what else do living organisms move through ecosystems? Explain your answer.

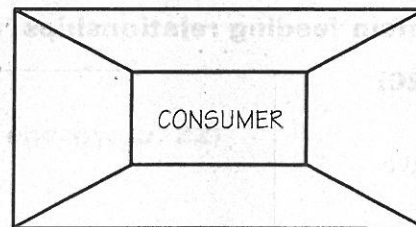
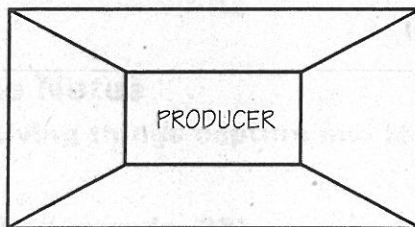
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**A. Producers and Consumers (pp. 23–24)**

- Fill in the frame game diagrams with information about the terms producer and consumer.

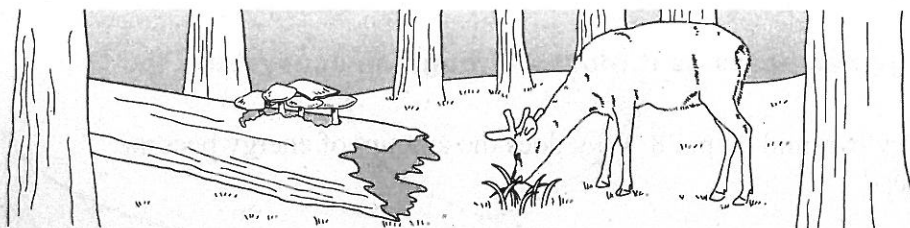
**B. Decomposers (p. 25)**

- Which of the life forms below is a producer? Which is a consumer? Which is a decomposer? How do you know?

producer: \_\_\_\_\_

consumer: \_\_\_\_\_

decomposer: \_\_\_\_\_




**II. Models help explain feeding relationships. (p. 26)**

4. What two models do scientists use to describe how energy moves through ecosystems?

\_\_\_\_\_

**A. Food Chain (p. 26)**

5. Fill in the combination notes for food chain.

Notes	Sketch to Explain
<p>A food chain shows...</p>	
<p>Each link in the chain is a...</p>	

**B. Food Web (p. 26)**

6. What is a food web? Why is it usually a better model of interactions than a food chain?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**III. Available energy decreases as it moves through an ecosystem. (p. 28)**

7. Think of an energy pyramid. There is more energy at the bottom of the pyramid than at the top. Why does the amount of energy change along the pyramid?

\_\_\_\_\_  
\_\_\_\_\_

## SECTION BIOMES CONTAIN MANY ECOSYSTEMS.

**1.4 Reading Study Guide A**

**BIG IDEA** Matter and energy together support life within an environment.

**KEY CONCEPT** Biomes contain many ecosystems.

**Vocabulary**

**biome** regions of Earth that are similar in climate and have similar types of plants

**coniferous trees** that keep their leaves or needles year round

**deciduous trees** that drop their leaves before winter

**estuary** the lower end of a river that feeds into the ocean

**Review**

1. Fill in the blanks to complete the paragraph.

Producers change the Sun's energy into \_\_\_\_\_ energy. When \_\_\_\_\_ eat plants, they \_\_\_\_\_ this chemical \_\_\_\_\_.

**Take Notes****I. Regions of Earth are classified into biomes. (p. 30)**

2. Three important factors determine what kind of plants live in a biome. List them.

\_\_\_\_\_

3. How is a biome different from an ecosystem?

\_\_\_\_\_

**A. Taiga and Tundra (p. 31)**

4. Read each statement. Write *taiga* or *tundra* on the line to show the biome it describes. If the statement describes both biomes, write *both*.

- Permafrost found here. \_\_\_\_\_
- Coniferous trees grow here. \_\_\_\_\_
- Snowshoe hares and elk live here. \_\_\_\_\_
- Winters here are long and cold. \_\_\_\_\_
- Trees cannot take root here. \_\_\_\_\_



**B. Desert and Grassland (p. 32)**

5. Fill in the combination notes for desert and grassland.

Notes	Sketch to Explain
• Deserts are...	
• Grasslands are...	

**C. Temperate Forest and Tropical Forest (p. 33)**

6. What are deciduous trees? Why are they in temperate forests but not tropical forests?

7. Label the plants with the biome that they would most likely be found in.

**II. Water covers most of Earth's surface. (p. 35)****A. Freshwater Biomes (p. 35)**

8. What are some of the similarities and differences between ponds and lakes?

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**B. Marine Biomes (p. 36)**

9. Fill in the combination notes for marine biomes.

Notes	Sketch to Explain
• Coastal ocean...	
• Open ocean...	
• Deep ocean...	