

# Chapter 2-- Cycles in Nature

27 PTS

## Section 1: The Cycles of Matter

### THE WATER CYCLE

1. The movement of water between the oceans, atmosphere, land, and living things is the \_\_\_\_\_.
2. The changing of water from liquid to vapor is called \_\_\_\_\_.
3. During \_\_\_\_\_, water vapor cools and returns to a liquid state
4. Water that falls from the atmosphere to the land and oceans is called \_\_\_\_\_.
5. Precipitation that falls on land and then flows into streams, rivers, and lakes is called \_\_\_\_\_.
6. Precipitation that seeps into the ground and is stored among rocks is called \_\_\_\_\_.
7. Water vapor is released by plants and returned to the environment in a process called \_\_\_\_\_.
8. Name three reasons water is needed for life on Earth.

3PTS

### THE CARBON CYCLE

- \_\_\_\_\_ 9. What are organic molecules?
  - a. molecules that are alive
  - b. water molecules
  - c. molecules that contain carbon
  - d. molecules that break down
- \_\_\_\_\_ 10. How do animals get carbon?
  - a. through photosynthesis
  - b. by taking it from the air
  - c. through respiration
  - d. by eating plants
- \_\_\_\_\_ 11. In what process is carbon returned to the environment?
  - a. condensation
  - b. transpiration
  - c. respiration
  - d. evaporation

**Directed Reading A *continued***

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**12.** What happens to carbon dioxide during photosynthesis?

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**13.** What happens during decomposition?

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**14.** What happens during combustion?

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**THE NITROGEN CYCLE**

**15.** The movement of nitrogen between the environment and living things is called the \_\_\_\_\_.

**16.** The process in which bacteria in the soil change nitrogen gas into forms that plants can use is called \_\_\_\_\_.

**17.** Why do organisms need nitrogen?

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**18.** Name two things that perform nitrogen fixation.

**2 PTS**

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**19.** How do plants get the nitrogen they need?

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**20.** How do animals get the nitrogen they need?

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**Directed Reading A** *continued*

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**21.** What happens to nitrogen during decomposition?

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**MANY CYCLES**

\_\_\_\_\_ **22.** Which one of the following statements describes cycles in nature?

- a.** They are all separate.
- b.** Minerals do not cycle through Earth.
- c.** Animals play no part in cycles.
- d.** Each cycle is connected to others.

**23.** Give two examples of minerals that living cells need that pass through cycles.

**2 PTS**

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# Section Quiz

9 PTS

## Section: The Cycles of Matter

Match the correct definition with the correct term. Write the letter in the space provided.

- |   |                  |
|---|------------------|
| _____ 1. change of water from vapor to liquid                                 | a. condensation  |
| _____ 2. precipitation that falls on land and then goes into rivers and lakes | b. precipitation |
| _____ 3. water falling from atmosphere to land and oceans                     | c. groundwater   |
| _____ 4. change of water from liquid to vapor                                 | d. runoff        |
| _____ 5. water stored between or within rocks                                 | e. evaporation   |

Write the letter of the correct answer in the space provided.

- |   |                               |                                  |
|---|-------------------------------|----------------------------------|
| _____ 6. How do most animals get the carbon they need?  | a. through photosynthesis.    | c. by eating plants.             |
|   | b. through respiration.       | d. through transpiration.        |
| _____ 7. Bacteria break down organic matter and return carbon dioxide and water to the environment. This is an example of | a. combustion.                | c. nitrogen fixation.            |
|   | b. transpiration.             | d. decomposition.                |
| _____ 8. Why do organisms need nitrogen?  | a. to transport nutrients.    | c. to transport wastes.          |
|   | b. to build proteins and DNA. | d. to regulate temperature.      |
| _____ 9. Most animals get nitrogen from   | a. the atmosphere.            | c. performing nitrogen fixation. |
|   | b. the soil.                  | d. eating other organisms.       |

14 pts

## Section 2: Ecological Succession

1. What was the condition of most trees in Yellowstone National Park after the summer forest fires in 1988?

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### REGROWTH OF A FOREST

- \_\_\_\_\_ 2. After one year, the burned forest in Yellowstone National Park
- a. had barely changed.
  - b. had begun to grow back.
  - c. had completely grown back.
  - d. was still completely destroyed.
- \_\_\_\_\_ 3. What is the meaning of succession?
- a. a forest growing back after a fire
  - b. a forest being destroyed
  - c. a community quickly growing back
  - d. a community growing over time

### PRIMARY SUCCESSION

4. The first organisms to start a process of succession are called \_\_\_\_\_.
5. The types of organisms that are usually the pioneer species in primary succession are \_\_\_\_\_.
6. Over time, the remains of \_\_\_\_\_ add to the soil.
7. What is usually present in an area where primary succession begins?

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8. How long does it take for an area of bare rock to become a forest?

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**Directed Reading A *continued***

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**SECONDARY SUCCESSION**

- \_\_\_\_\_ **9.** Secondary succession may occur in an area if
- a.** no disturbances occur there for hundreds of years.
  - b.** soil is left intact after a major disturbance.
  - c.** a glacier retreats from the area.
  - d.** a farmer continually grows crops in the area.
- \_\_\_\_\_ **10.** What is usually the first plant to grow in secondary succession?
- a.** conifers
  - b.** crops
  - c.** crab grass
  - d.** horsetweed
- \_\_\_\_\_ **11.** In secondary succession, how long does it take for a forest to form?
- a.** 5–15 years
  - b.** 100 years
  - c.** 250 years
  - d.** 1,000 years

**MATURE COMMUNITIES AND BIODIVERSITY**

- \_\_\_\_\_ **12.** What is the meaning of a mature community?
- a.** a forest that grows through primary succession
  - b.** a community with high biodiversity
  - c.** a desert that has many plants
  - d.** a community with organisms well adapted to the area

**13.** What is a climax species?

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**14.** Why is biodiversity important to communities of organisms?

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## Activity

**Vocabulary Activity**

16 pts

**Cycle Search**

After you finish reading the chapter, complete this puzzle. In the space provided, write the term described. Then find those words in the puzzle on the next page. Terms can be hidden in the puzzle vertically, horizontally, or backward.

1. precipitation that is stored between or within rocks

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2. the burning of a substance

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3. a gradual development of a community over time

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4. process that is the basis of the carbon cycle

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5. process that changes nitrogen gas into forms that plants can use

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6. process in which sugar molecules are broken down to release energy

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7. the variety of species that are present in an area

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8. process in which water changes from liquid to vapor

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9. water, in solid or liquid form, that falls from the atmosphere to Earth

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10. a well-adapted species in a mature community

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11. precipitation that falls on land and then flows into rivers and lakes

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12. the breakdown of substances into simpler molecular substances

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**Vocabulary Activity** *continued*

13. the first species to colonize an uninhabited area

14. process in which plants release a large amount of water vapor

15. kind of molecule that contains carbon

16. process in which a vapor cools and returns to liquid

A	N	R	P	I	O	N	E	E	R	S	P	E	C	I	E	S
D	O	C	R	E	S	P	I	R	A	T	I	O	N	U	X	C
E	I	A	E	R	U	N	O	F	F	Y	M	T	B	N	K	L
C	T	R	C	K	C	O	M	B	U	S	T	I	O	N	S	I
O	A	B	I	L	C	P	T	G	A	R	E	I	W	I	Q	M
M	X	I	P	E	E	Y	O	O	J	D	T	W	S	Z	O	A
P	I	O	I	I	S	M	Y	L	N	A	G	E	Z	I	N	X
O	F	D	T	G	S	Z	O	B	R	S	H	C	T	O	L	S
S	N	I	A	V	I	T	U	I	D	T	I	W	I	R	E	P
I	E	V	T	W	O	E	P	C	N	O	U	T	J	G	E	E
T	G	E	I	R	N	S	E	Y	A	S	A	L	W	A	R	C
I	O	R	O	F	N	T	S	D	P	R	Q	U	A	N	T	I
O	R	S	N	A	P	O	R	E	O	G	P	O	T	I	R	E
N	T	I	R	C	T	L	F	P	I	T	E	M	I	C	I	S
J	I	T	N	O	I	T	A	S	N	E	D	N	O	C	N	G
O	N	Y	H	I	R	Y	K	W	O	X	R	L	P	O	S	E
X	V	P	C	O	E	G	R	O	U	N	D	W	A	T	E	R

3 bonus points for completing word search



# Section Quiz

9 pts

## Section: Ecological Succession

Match the correct definition with the correct term. Write the letter in the space provided.

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|--|--------------------------------|
| _____ 1. first organisms to live in an area                            | <b>a.</b> succession           |
| _____ 2. community growing in an area where organisms have never lived | <b>b.</b> primary succession   |
| _____ 3. well-adapted species in a mature community                    | <b>c.</b> secondary succession |
| _____ 4. community growing in an area affected by a disturbance        | <b>d.</b> pioneer species      |
| _____ 5. replacement of one type of community by another over time     | <b>e.</b> climax species       |

Write the letter of the correct answer in the space provided.

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|--|--|-------------------------------|
| _____ 6. Primary succession begins in an area composed of  | <b>a.</b> fertile soil.                                  | <b>c.</b> bare rock.          |
|  | <b>b.</b> farm crops.                                    | <b>d.</b> mosses and lichens. |
| _____ 7. A forest grows back after a forest fire. This is an example of  | <b>a.</b> primary succession.                            | <b>c.</b> biodiversity.       |
|  | <b>b.</b> secondary succession.                          | <b>d.</b> mature community.   |
| _____ 8. What effect does biodiversity have on a community?  | <b>a.</b> It makes destruction by insects impossible.    |                               |
|  | <b>b.</b> It makes primary succession more likely.       |                               |
|  | <b>c.</b> It enables species to survive in a desert.     |                               |
|  | <b>d.</b> It enables the community to withstand changes. |                               |
| _____ 9. An area of desert contains cactuses that are very old, and animals that depend on the cactuses for food and shelter. This area is an example of | <b>a.</b> the beginning of primary succession.           |                               |
|  | <b>b.</b> a pioneer community.                           |                               |
|  | <b>c.</b> a mature community.                            |                               |
|  | <b>d.</b> a cycle of succession.                         |                               |