Name _____ Date _____

SG 3.5 Cycling of Matter

KEY CONCEPT

Matter cycles in and out of an ecosystem.

VOCABULARY

hydrologic cycle	nitrogen fixation
biogeochemical cycle	

MAIN IDEA: Water cycles through the environment.

Fill in the chart with a description of each process that describes how water moves through an ecosystem in the hydrologic cycle.

Process	Description
1. precipitation	
2. evaporation	
3. transpiration	
4. condensation	

MAIN IDEA: Elements essential for life also cycle through ecosystems.

Complete the following sentences with the proper terms.

5. Plants, animals, and most other organisms need _____ for cellular _____.

6. Oxygen is released as a waste product by plants during the process of _____. Animals takes in this oxygen and release it as _____ during the process of _____.

7. In the carbon cycle, plants use energy from the Sun to convert _____ from the air into organic material that becomes a part of the plant's structure.
8. Carbon is released to the atmosphere as carbon dioxide when you breathe during the process of _____ or through the _____ of dead organisms.
9. _____, or the burning of fossil fuels, also adds carbon dioxide to the atmosphere.
10. What is nitrogen fixation?

_____

_____

11. List **five** steps that occur during the phosphorus cycle.

_____

_____

_____

_____

Vocabulary Check

Use the following word origins to answer the questions below.

Word Part	**Meaning**
bio-	life
chem-	chemical
geo-	earth
hydro-	water

12. What is a biogeochemical cycle?

_____

_____

13. What is the hydrologic cycle?

_____

_____

Section Quiz 3.5 Cycling of Matter

Choose the letter of the best answer.

_____ 1. The water cycle, in which water moves from the atmosphere, to the surface, below ground, and back, is also called the
   a. biogeochemical cycle.
   b. oxygen cycle.
   c. hydrologic cycle.
   d. nitrogen cycle.

_____ 2. Which two biogeochemical cycles depend directly on photosynthesis?
   a. the hydrologic cycle and the oxygen cycle
   b. the carbon cycle and the phosphorus cycle
   c. the nitrogen cycle and the phosphorus cycle
   d. the oxygen cycle and the carbon cycle

_____ 3. Fossil fuels are part of which of the following cycles?
   a. oxygen
   b. carbon
   c. nitrogen
   d. phosphorus

_____ 4. What happens during the process of nitrogen fixation?
   a. Bacteria change ammonium into nitrate.
   b. Bacteria grow on nodules on plant roots.
   c. Bacteria absorb ammonia and excrete ammonium.
   d. Bacteria convert gaseous nitrogen into ammonia.

_____ 5. Where does most of the phosphorus cycle take place?
   a. in the atmosphere
   b. at and below ground level
   c. on fungi near plant roots
   d. close to rocky terrain