

Study Guide **Cycling of Matter**

The water cycle.

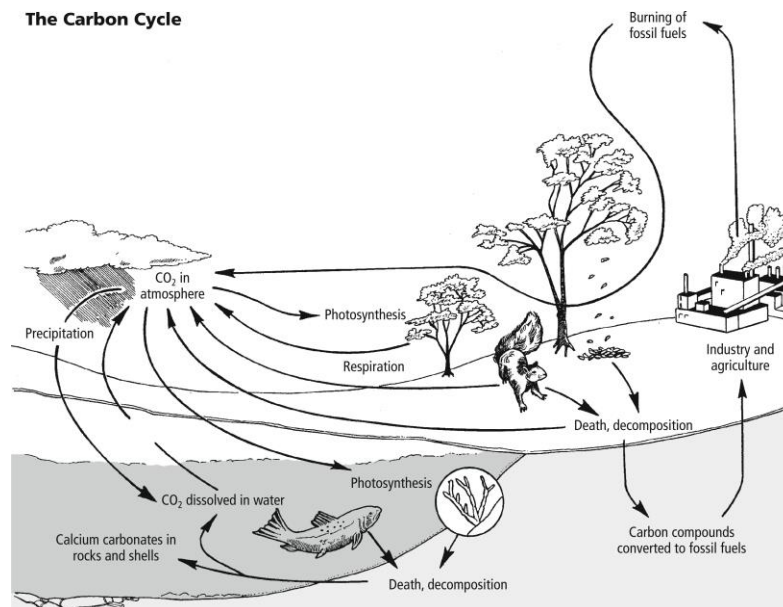
Number the steps of the water cycle in the order in which they occur. Begin with the collection of water in lakes or oceans.

- _____ 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.

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, Cycling of Matter *CONTINUED*

The nitrogen cycle.

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

- | | | | | |
|------------------------|--------------------------|------------------|-----------------|--------------------|
| ammonia | atmosphere | consumers | decay | decomposers |
| denitrification | nitrogen fixation | plants | proteins | urinate |

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) _____ .

The phosphorus cycle.

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

long-term cycle

new rock

short-term cycle

soil and groundwater

22. _____
 23. _____
 24. _____
 25. _____

