**BIOGEOCHEMICAL CYCLES**

### Water Cycle: Fill in the blanks

<table>
<thead>
<tr>
<th>evaporation</th>
<th>clouds</th>
<th>precipitate</th>
<th>condenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>dries up</td>
<td>heavy</td>
<td>vapor</td>
<td>atmosphere</td>
</tr>
<tr>
<td>heating</td>
<td>plants</td>
<td>oceans</td>
<td>lakes</td>
</tr>
<tr>
<td>droplets</td>
<td>snow</td>
<td>hail</td>
<td>glaciers</td>
</tr>
<tr>
<td>runoff</td>
<td>rivers</td>
<td>cycle</td>
<td>sleet</td>
</tr>
<tr>
<td>rain</td>
<td>evaporates</td>
<td>droplets</td>
<td>vapor</td>
</tr>
</tbody>
</table>

**Evaporation**

On a warm, sunny day, a glass of water seems to slowly disappear. This is because the energy from the sun ______ the water and turns the liquid water into water ______. This process is called ______. When the water ______, it becomes a gas in the ______.

**Condensation**

As the water vapor rises, it cools off and ______ into water ______. If the water vapor becomes extremely cold, it will form ice crystals instead of water droplets. As the water droplets or ice crystals grow bigger and more numerous, they form ______.

**Precipitation**

If water droplets or ice crystals become too ______, they can't stay in the air. They ______. Water droplets precipitate as ______, sleet, hail, or ______.

**Collection**

This precipitation gathers into ______ and streams that flow down to the lakes and oceans. This is called ______. Not all of the water makes it back to the oceans and lakes right away. Some of it is used by animals and ______. Some is frozen into ______. Eventually, the animals and plants breathe the water out and the glaciers melt, releasing the water back into the water ______.

### Carbon Cycle: Fill in the blanks

<table>
<thead>
<tr>
<th>Coal</th>
<th>Oil</th>
<th>Natural Gas</th>
<th>burning of fossil fuels</th>
<th>decayed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photosynthesis</td>
<td>Respiration</td>
<td>ocean</td>
<td>glucose</td>
<td>Greenhouse</td>
</tr>
</tbody>
</table>

a. Plants use CO2 in the process of ______ to make ______ and oxygen.

b. Animals use oxygen in the process of ______ and make more CO2.

c. The ______ is the main regulator of CO2 in the atmosphere because CO2 dissolves easily in it.

d. In the past, huge deposits of carbon were stored as dead plants and animals ______.

e. Today these deposits are burned as fossil fuels, which include ______, ______, and ______.

f. More CO2 is released in the atmosphere today than in the past because of the ______.

g. Too much CO2 in the atmosphere may be responsible for the ______ effect/global warming.
**Phosphorus Cycle: Fill in the Blanks**

| Pollution | basins | rocks | minerals | waste | DNA | overgrowth | plants |

a. Phosphorus is NOT found in the free state in nature, but is contained mostly in ___________ and ___________.

b. It is an essential nutrient for life, as it makes up important chemicals such as ___________.

c. In the Phosphorus Cycle, phosphorus moves between the soil and ___________, which are eaten by animals. The animals use phosphorus, and then their ___________ products help return the phosphorus to the soil.

d. Some of the phosphorus in soils can be washed away into water _____________.

e. Another source of phosphorus in water comes from man-made _____________.

f. Too much phosphorus in water leads to plant ______________ or eutrophication, strangling all other life forms in the water.

---

**Nitrogen Cycle: Fill in the Blanks**

| Atmosphere | 78% | ammonia | proteins | Denitrifying | nitrification |
| Nitrate | nitrogen-fixing | plants | animals | waste | plants |

a. Our atmosphere is ___________ nitrogen gas.

b. Animals and plants cannot directly use all the nitrogen found in our ___________.

c. Only special bacteria can directly use nitrogen in our atmosphere and “fix” it so other organisms can benefit. These bacteria are called ___________-_________ bacteria.

d. Higher organisms use nitrogen to make ____________.

e. Animal wastes decay by the action of bacteria which create ___________ and ___________ products rich in nitrogen, and useful for plants to use again.

f. ___________ bacteria in the soil can break down the ammonia into the gaseous form of nitrogen, which is not available for use by plants or animals.

g. In another part of the cycle, animals eat ___________ containing nitrogen, which is again returned to the soil by animal ___________ or decaying ___________ and ___________.