# Cycles worksheet

## Carbon Cycle - *Please answer the following using the words in the text box.*

|  |  |
| --- | --- |
| Coal Oil Natural Gas  | burning of fossil fuels volcanoes  |
| Photosynthesis Respiration ocean  | sugar Greenhouse decayed  |

1. Plants use CO2 in the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make \_\_\_\_\_\_\_\_\_\_\_ and oxygen.
2. Animals use oxygen in the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and make more CO2.
3. The \_\_\_\_\_\_\_\_\_\_\_\_ is the main regulator of CO2 in the atmosphere because CO2 dissolves easily in it.
4. In the past, huge deposits of carbon were stored as dead plants and animals \_\_\_\_\_\_\_\_\_\_.
5. Today these deposits are burned as fossil fuels, which include \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. More CO2 is released in the atmosphere today than in the past because of \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
7. Another natural source for CO2 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. Too much CO2 in the atmosphere may be responsible for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ effect.

## Phosphorus Cycle - *Please answer the following using the words in the text box.*

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

1. Phosphorus in NOT found in the free state in Nature, but is contained mostly in \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. It is an essential nutrient for life, as it makes up important chemicals such as \_\_\_\_\_\_\_.
3. 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 Sulfur for the next generation of phosphorus in the soil.
4. Some of the phosphorus in soils can be washed away into water \_\_\_\_\_\_\_\_\_\_\_.
5. Another source of phosphorus in water comes from man-made \_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Too much phosphorus in water leads to plant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, strangling all other life forms in the water.
7. Why is the use of too much phosphorus-rich fertilizers bad for the environment?

 **Nitrogen Cycle -** *Please answer the following* ***using the words in the text box.***

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

1. Our atmosphere is \_\_\_\_\_\_ nitrogen gas.
2. Animals and plants cannot directly use all the nitrogen found in our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Only special bacteria can directly use nitrogen in our atmosphere and “fix” it so other organisms can benefit. These bacteria are called \_\_\_\_\_\_\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_ bacteria.
4. Higher organisms use nitrogen to make their \_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Animal waste decay by the action of bacteria which create \_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_ products rich in nitrogen, and useful for plants to use again.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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.
7. In another part of the cycle, animals eat \_\_\_\_\_\_\_\_\_\_\_\_ containing nitrogen, which is again returned to the soil by animal \_\_\_\_\_\_\_\_\_\_\_\_\_ or decaying \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.
8. Draw a **diagram** of the Nitrogen cycle using the words in the text box.

 **Water Cycle -** *Please answer the following* ***using the words in the text box.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| evaporationevaporatesheatinghail | sunnycloudsheavycycle | dropletsrunoffraincrystals | plantssnowrivers streams | precipitatevapouroceansglaciers | condensesatmospherelakes |

**Evaporation**

On a warm, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ day, water in a glass of water seems to slowly disappear. This is because the energy from the sun is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the water up and turning the liquid water into water \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This process is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When the water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, it becomes an invisible gas in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Evaporation takes places all over the earth, but especially in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where there is lots of water.

# Condensation

As the water vapor rises, it cools off and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If the water vapor becomes extremely cold, it will form ice \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and ice crystals precipitate as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Sometimes, the rain freezes before it hits the earth and precipitates as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

#  Runoff

This precipitation gathers into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.