In ecosystems nutrients are continuously cycled through the ecosystem. How is this different from energy in ecosystems?

______________________________________________________________________

Water enters the atmosphere by _________________. If water evaporates off of plants it is called _________________. While in the atmosphere it becomes precipitation. Some of the water rains, or in other words ______________ into the soil and becomes groundwater. Other water runs across the surface of the Earth into lakes, rivers, or the ocean. This is called _______________.

**How do humans impact the water cycle?**
Using/wasting too much water causing drought
Pollution enters the water through runoff
Carbon is found mostly in the form of Carbon Dioxide. Large amounts of carbon dioxide are found in the atmosphere and in the ocean. Plants use carbon dioxide in the air to make food in the process of _______________. Animals take in oxygen and release carbon dioxide in the process of _______________ _________________. Burning fossil fuels (oil and coal) also releases carbon dioxide into the atmosphere.
Nitrogen Cycle

Air is 78% nitrogen. However, most organisms cannot use nitrogen gas ($N_2$). Some bacteria convert nitrogen to ammonia ($NH_3$) in the soil in a process called **nitrogen fixation**. Plants can then absorb the nitrogen in a process called assimilation. **Ammonification**, is when nitrogen from animal waste or decaying bodies is returned to the soil by bacteria. Finally, in **denitrification**, nitrogen is returned to the atmosphere.
Phosphorus Cycle

Phosphorus is important for building DNA. Phosphorus never enters the atmosphere. It is mainly found in rocks, minerals, and ocean sediments. Phosphorus can also be found in animal waste. Phosphorus gets into water by R_________. Plants absorb phosphorus through their roots and animals get phosphorus by eating plants. When plants and animals die the phosphorus is returned to the soil.

Too Much nitrogen and phosphorus.
Nitrogen & phosphorus are found in fertilizer and animal waste. When humans use too much fertilizer it can run off into bodies of water. The nitrogen and phosphorus cause a lot of algae to grow. This is called an algal bloom. When the algae dies, bacteria decompose it. The bacteria use up most of the O_________ in the water causing fish and other aquatic animals to die. This whole process is called oxygen depletion.