

**Power Notes 3.5: Cycling of Matter**

<p>Oxygen cycle:</p> <ul style="list-style-type: none"> <li>- Oxygen is needed for cellular respiration;</li> <li>- Respiration and photosynthesis are major components of the cycle</li> <li>- Cycles indirectly thru the ecosystem by the cycling of other nutrients</li> </ul>	<p>Carbon cycle:</p> <ul style="list-style-type: none"> <li>- Building block of life;</li> <li>- Respiration, decomposition, combustion, and photosynthesis are major components of the cycle</li> <li>- Emitted by burning of fossil fuels</li> <li>- Carbon sinks – storage for long periods of time</li> </ul>
<p>Nitrogen cycle:</p> <ul style="list-style-type: none"> <li>- Nitrogen fixation converts nitrogen into ammonia, which can be used by other organisms</li> <li>- Takes place underground</li> <li>- N<sub>2</sub> fixing bacteria in nodules in plant roots; some a free living in soil</li> </ul>	<p>Phosphorus cycle:</p> <ul style="list-style-type: none"> <li>- Takes place at &amp; below the ground</li> <li>- Phosphate released by the weathering of rocks,</li> <li>- Plants and fungi take phosphate in roots,</li> <li>- Phosphorus moves through food chain, returned to soil or water by decomposition</li> </ul>

Hydrologic cycle:  
 - aka Hydrologic cycle  
 - The circular pathway of water on earth  
 - Bodies of organisms made mostly of water