

## **Biogeochemical Cycles Jigsaw Activity**

**Part 1:** You will pick a partner, and you will work together and gather information about the 4 biogeochemical cycles. Split up the work and you need to answer the following on a sheet of paper and learn them well enough to present to each other. Take as many notes as possible to help you in this task. You will be turning your notes in. You must use the resources provided below, but you may use other resources – just document them!

**Color and make a key for each biogeochemical cycle.** (You may use the ones provided or draw your own)

1. What is the name of your cycle?
2. Is your cycle known by any other names?
3. Why is the element or compound in your cycle important to living things? (be specific)
4. Where is the largest reservoir of your element?
5. List and explain the key steps of your cycle.
  - a. Use the key vocabulary below to ensure you talk about the main parts of your cycle.
6. What are some human impacts on your cycle? (at least 2)
7. How can these impacts be prevented?

**Vocabulary & Resources – Feel free to use other resources, just make sure you list them.**

### ***Water Cycle***

Key Vocabulary: Evaporation, Transpiration, Evapotranspiration, Condensation, Precipitation, Infiltration/Recharge, Percolation, Ground Water, Runoff

1. [http://www.region.waterloo.on.ca/web/region.nsf/0d78cb956f92d4bb85256c6b005a62c7/\\$file/hydrologic2.swf?openelement](http://www.region.waterloo.on.ca/web/region.nsf/0d78cb956f92d4bb85256c6b005a62c7/$file/hydrologic2.swf?openelement)
2. [http://www.nwrfc.noaa.gov/info/water\\_cycle/hydrology.cgi](http://www.nwrfc.noaa.gov/info/water_cycle/hydrology.cgi)
3. <http://ga.water.usgs.gov/edu/watercycleevapotranspiration.html>

### ***Carbon Cycle***

Key Vocabulary: Photosynthesis, Respiration, Fossil Fuels, Decay/Decomposition, Plants, Animals, Greenhouse Gas, Carbonate, Combustion

1. [http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP\\_carbon\\_cycle.swf](http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP_carbon_cycle.swf)

2. [http://www.windows2universe.org/earth/Water/co2\\_cycle.html](http://www.windows2universe.org/earth/Water/co2_cycle.html)

3. <http://www.elmhurst.edu/~chm/vchembook/306carbon.html>

### ***Nitrogen Cycle***

Key Vocabulary: Free Nitrogen/Nitrogen gas  $N_2$ , Nitrogen Fixation, Lightening, Nitrifying Bacteria,

Nitrification, Nitrite ( $NO_2^-$ ), Nitrate ( $NO_3^-$ ), Ammonia ( $NH_3$ ), Decay/Decomposition,

Denitrifying Bacteria, Denitrification, Plants, Animals, Eutrophication, Acid Rain

1. [http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP\\_nitrogen\\_cycle.swf](http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP_nitrogen_cycle.swf)

2. <http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/N/NitrogenCycle.html>

3. [http://earthtrends.wri.org/features/view\\_feature.php?fid=1&theme=2](http://earthtrends.wri.org/features/view_feature.php?fid=1&theme=2)

### ***Phosphorus Cycle***

Key Vocabulary: Long Term Phosphorus Cycle, Short Term Phosphorus Cycle, Phosphate Ion, Plants, Animals, Birds, Decay/Decomposition, Limestone, Erosion, Eutrophication

1. [http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP\\_phosphorus\\_cycle.swf](http://fc.deltasd.bc.ca/~mannandale/sc10/hw/EP_phosphorus_cycle.swf)

2.

<http://s69.photobucket.com/albums/i70/SRMEP/Biology%20SWF%20Vids/?action=view&current=PhosphorusCycle.swf>

3. <http://www.worldwatch.org/node/516>