

# Biogeochemical Cycles Jigsaw Activity

Part 1: You will randomly be assigned to a cycle. For your cycle you need to answer the following on a sheet of paper and learn it well enough to present to your peers. 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!

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?
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?
7. How can these impacts be prevented?

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

## Group 1: 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>

## Group 2: 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>

## Group 3: Nitrogen Cycle

Key Vocabulary: Free Nitrogen/Nitrogen gas N<sub>2</sub>, Nitrogen Fixation, Lightening, Nitrifying Bacteria, Nitrification, Nitrite (NO<sub>2</sub><sup>-</sup>), Nitrate (NO<sub>3</sub><sup>-</sup>), Ammonia (NH<sub>3</sub>), 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)

## Group 4: 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>