Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Biogeochemical Cycle Webquest**

* **The Carbon Cycle :** The carbon cycle is the pathway that carbon follows as it moves in and out of living organisms.

All living things are partially made of carbon. Where does this carbon come from? Is carbon

“created” daily? Actually- it is NOT. All the carbon atoms that are in your body are simply recycled carbon atoms from the

beginning of earth’s history! That means that the carbon atoms that are in your body right now have been in some other

organism’s body in the past. Just think, a carbon atom in your eyeball could have been in a dinosaur’s poop!

Complete the following animation:

<http://vro.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/soilhealth_organic_carbon-cycle>

1. Carbon from the atmosphere:
	1. Which organisms are responsible for absorbing carbon from the atmosphere?
	2. What form (what compound) is the carbon in?
	3. What is the name of this process?
	4. What is made as a result of this process?
2. How do animals get the carbon?
3. How do animals return carbon to the atmosphere? (There are two ways mentioned)
4. Look at the carbon cycle below. Place the letter of the process (a,b,c,ord) next to the process in the picture:

**Photosynthesis** (from atmosphere to plant sugars)

**Consumption** (eating) (from plant to animal to animal)

**Respiration** (returning carbon to atmosphere by “breathing out”)

**Decomposition** (returning carbon to soil by rotting into the ground)

Do a google search for the answer to the question below:

List two ways we (humans) might be altering the carbon cycle?

* **The Nitrogen Cycle :** Nitrogen is an essential part of proteins and DNA. Like carbon, nitrogen is recycled continuously.

Go to this link and answer the questions below on the nitrogen cycle:

<http://www.ducksters.com/science/ecosystems/nitrogen_cycle.php>

1. Where is most nitrogen in the biosphere located?
2. This nitrogen is not in a useable form. Plants and animals cannot simply absorb nitrogen from the atmosphere. It must undergo \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first.
3. There are two ways that nitrogen can NATURALLY be removed from the atmosphere:

a)

b)

1. How does the nitrogen get to herbivores and carnivores?
2. What happens to the nitrogen when organisms die?
3. What is the name of the process which returns nitrogen to the atmosphere?
4. What type of **ORGANISM** do you notice is essential in nearly every step of the nitrogen cycle?
* **The Water Cycle**

<http://education.jlab.org/reading/water_cycle.html>

1. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ evaporates \_\_\_\_\_\_\_\_\_\_\_\_\_ from lakes and oceans. As the air rises, it cools. The water vapor condenses into tiny droplets of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The droplets crowd together and form a \_\_\_\_\_\_\_\_\_\_. Wind blows the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ towards the land. The tiny droplets join together and fall as precipitation to the \_\_\_\_\_\_\_\_\_\_\_\_. The water soaks into the ground and collects in \_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_ that never ends has started again!
2. Identify each number in the picture below

1.

2.

3.

4.

5.