***Homework on Biogeochemical Cycles – Due to Blackboard no later than Sept. 1, 2016 at noon. Bring a copy of your answers to class (on paper or in electronic form so you can refer to them for the group activity on Sept. 1)***

*You were assigned a biogeochemical cycle in your in-class work on August 30 – hopefully you wrote that word down in your notes! If you did not write it down, you forgot, lost it or you weren’t in class please look in the week 2 folder in Blackboard at the file called “homework words” for your assigned word. If you were in class on August 30 you looked at a photo (see “Rio Grande photo” in week 2 folder on Blackboard) and wrote down what you saw/felt/thought about the photo. If you forgot what we did or missed class the August 30 this activity is posted on Blackboard in the “week 2” folder as well!*

*Using the biogeochemical cycle that you have been given (which is either related to an element or a molecule) to answer the following questions. Refer to your book (Chapter 2), the powerpoints on Blackboard or the internet to help you answer the questions.*

1. *Explain why the element or molecule involved in this cycle is essential for life.*

*See your book – it explains at the beginning of each biogeochemical cycle why these materials are important for life.*

1. *What are two living things and two nonliving things you saw (or your group saw) in the photo that would have this element or molecule in it.*

*Anwers will vary. A tree would have carbon, nitrogen, water and phosphorous in it. The soil would have carbon, nitrogen, water and phosphorous in it.*

1. *Referring to your book or this week’s power point slides try to determine two reservoirs of this element or molecule and two fluxes that are likely taking place in the region shown in the photo (either you can see them directly in the photo or you believe they are there – maybe hidden beneath the surface of the water or soil, for example).*

*Answers vary*

1. *Are the fluxes related to biological processes or geological processes?*

*Geological processes are shown in the bottom parts of the figures in your book and biological processes in the middle parts of the figures in your book.*

1. *What human activities might speed up or slow down these two fluxes?*

*These are shown in figures (like burning fossil fuels, using fertilizers and detergents, pumping groundwater).*

1. *If the activity is speeding up the flux is it a positive or negative feedback?*

*Remember that positive feedback refers to something speeding up a system, making it more unstable and increasing change in the same direction as the initial change. Negative feedback slows down a system and makes it more stable.*

1. *Make a drawing showing how the 2 reservoirs and 2 fluxes for your cycle interact with each other. You can either scan your drawing and attach it to the homework or take a photo of your drawing and attach it to the homework. If you have questions about how to do this on Blackboard please ask me or one of the teaching assistants. ALSO you need to bring your drawing to class for the next activity.*

*Answers will vary*