THE CYCLING OF NUTRIENTS – NOTES ORGANIZER

1. The Cycling of Nutrients

- a. In what way are you connected to Albert Einstein?
- b. Why is it necessary for nutrients to cycle?
- c. Carbon, Hydrogen, Oxygen and Nitrogen are the building blocks of ______,

which are the building blocks of ______, which are the building blocks of

_____, which are the building blocks of LIFE!!

2. The Water Cycle

- a. What is the Water Cycle?
- b. Nearly _____% of the Earth's surface is covered in *water*.
- c. Describe the following steps of the Water Cycle

Evaporation	
Transpiration	
Condensation	
Precipitation	

d. Pause the video and draw a (simple) picture which illustrates the Water Cycle in the space below.

3. The Nitrogen Cycle

- a. Approximately _____% of the Earth's atmosphere is made up of *Nitrogen*.
- b. Why must nitrogen be "*fixed*?"
- c. What is the Nitrogen Cycle?
- d. As you learn about the Nitrogen cycle, fill in the chart which identifies and describes the four main processes.

Nitrogen Fixation	
	Animals eat the plants full of usable, fixed nitrogen.
Denitrification	
	Animals release wastes loaded with nitrogen which can be used as fertilizers.

- e. What are the **three** methods which can be used to <u>fix nitrogen</u>?
- f. Describe how *lightning* is used for nitrogen fixation.
- g. Describe the symbiotic relationship between *nitrogen fixing bacteria and plants*.

i. This is an example of _______ symbiosis.

h. Pause the video and draw a (simple) picture which illustrates the Nitrogen Cycle in the space below.

4. The Carbon Cycle

- a. Let's review, what is the purpose of **photosynthesis**?
 - i. Photosynthesis takes place in the ______.

b. Let's review, what is the purpose of cellular respiration?

- i. Cellular respiration takes place in the ______.
- c. What is the Carbon Cycle?
- d. In what forms does carbon *EXIST*?
- e. Through what process does carbon ENTER the biotic environment?
- f. How does carbon *RETURN* to the atmosphere?
- g. Describe the impact humans are having on the carbon cycle.
- h. Summarize the **carbon cycle**.

- i. Explain the concerning connection between burning fossil fuels and global warming.
- j. Pause the video and draw a (simple) picture which illustrates the Carbon Cycle in the space below.

5. The Phosphorus Cycle

- a. What cycle is the Phosphorus Cycle most like?
- b. What is the **Phosphorus Cycle**?
- c. ______ is an essential nutrient for plants and animals.
- d. Why is phosphorus a necessary nutrient?
- e. What two processes cause rocks to release inorganic phosphate?
- f. Where does inorganic phosphate go once it has been released from the rocks?
- g. _____ take up inorganic phosphate from the soil.
- h. How do animals get phosphate?
- i. How does organic phosphate get into the soil?
- j. What turns organic phosphate into inorganic phosphate?
- k. Pause the video and draw a (simple) picture which illustrates the Phosphorus Cycle in the space below.

Carbon Cycle	Water Cycle	
Phosphorus Cycle	Nitrogen Cycle	