



WATER, CARBON AND NITROGEN CYCLE WORKSHEET/COLORSHEET



Directions: Color and make a key for each biogeochemical cycle. As you read about each cycle answer the following questions:

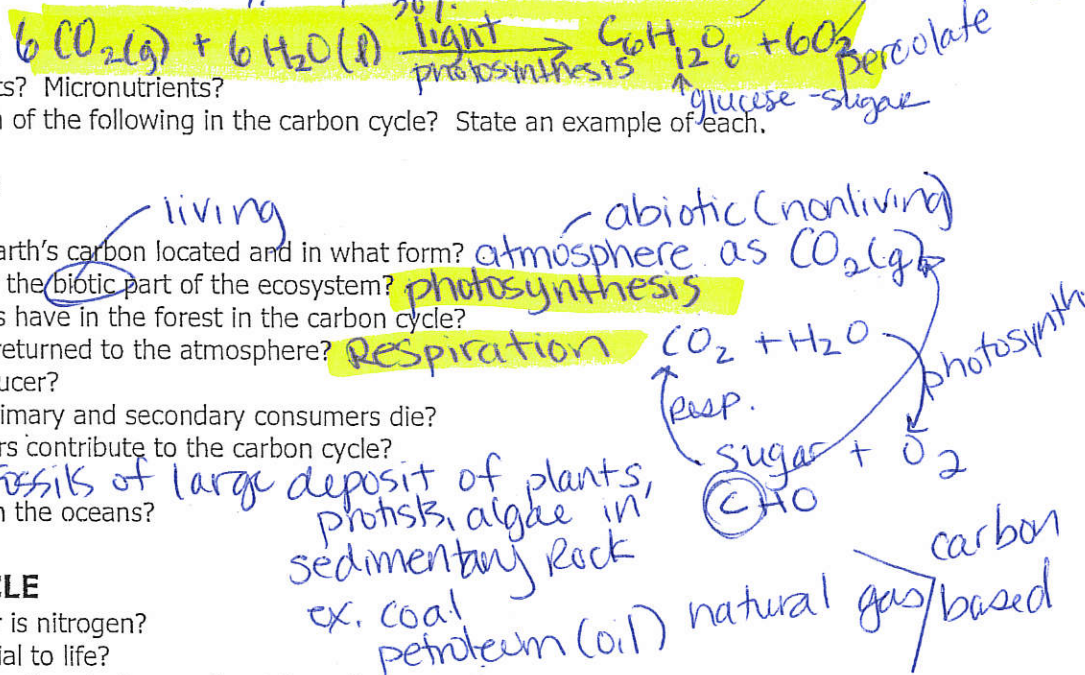
THE WATER CYCLE

1. Name three important needs for water.
2. How is water distributed through the biosphere? **hydrologic cycle**
3. What draws water back to the earth?
4. What is **transpiration**? **H₂O loss by plants by stomata**
5. What determines which plants to grow where?
6. What is an **aquifer**? **water saturated zone of dirt**
7. Name two ways water travels from land to enter the ocean. **1) RUNOFF**
8. What does runoff include? **2) SEEPAGE**
9. How much water enters the hydrologic cycle? **80%**
10. How much water falls back as rain? **~50%**



THE CARBON CYCLE

1. What are macronutrients? Micronutrients?
2. What is the role of each of the following in the carbon cycle? State an example of each.
 - a. Primary producers
 - b. Secondary producers
 - c. Decomposers
3. Where is most of the Earth's carbon located and in what form? **atmosphere as CO₂(g)**
4. How does carbon enter the **living** part of the ecosystem? **photosynthesis**
5. What function do plants have in the forest in the carbon cycle?
6. How is carbon dioxide returned to the atmosphere? **Respiration**
7. What is a primary producer?
8. What happens when primary and secondary consumers die?
9. What do detritus feeders contribute to the carbon cycle?
10. What is a **fossil fuel**? **Fossils of large deposit of plants, protists, algae in sedimentary rock**
11. How does carbon get in the oceans? **ex. coal petroleum (oil) natural gas**



THE NITROGEN CYCLE

1. What percent of the air is nitrogen?
2. Why is nitrogen essential to life?
3. How do plants and animals get nitrogen if not from the atmosphere?
4. What are nitrogen fixing bacteria?
5. What is a major reservoir for ammonia?
6. Why do herbivores need nitrogen?
7. What is denitrification?

THE PHOSPHORUS CYCLE

1. Why is phosphorus an important biological molecule?
2. What happens to phosphorus that erodes from rock and soil?
3. How are phosphates incorporated into the organic molecules in plants and animals?
4. What happens to the phosphates when plants and animals die?
5. What happens to the phosphorous that is carried by runoff to the oceans?
6. How are phosphates incorporated into the organic molecules in aquatic plants and animals?
7. What is different about the phosphorus cycle as compared to the water, carbon, and nitrogen cycles?