**Hydrosphere Activity**

**Class Copy**

**Background:** The hydrosphere on my desk is sealed and hasn’t been opened in *3 months*. The elodea, snails and guppies that are in there haven’t had *any*physical connection to the outside that entire time. In this activity we are going to answer two questions: How are these organisms still alive? And what happens to the **carbon** in this closed system?

Follow the instructions to answer these questions for yourself.

1. Draw the hydrosphere into your journal. **Make the picture** **at least** **½ a page**, and be sure to **include**:
   1. The jar itself
   2. The snails
   3. The Elodea (green plant)
   4. The guppies (small fish)
2. Using chemical symbols and arrows, show how **carbon** travels through this closed system
   1. Use a different color pen for **carbon**
   2. Write the chemical formula for the molecules that carbon is part of

Ex: CO2 for carbon dioxide

* 1. Use arrows to show the path that carbon takes

1. Next to each arrow, write a description
   1. State what is happening to the molecule containing **carbon** and why.
2. Label the processes that each organism goes through to use **carbon**
   1. Either Photosynthesis or Respiration
   2. Different label for each: the snail, the guppy and the elodea
   3. Include the **balanced chemical equation** with each process

Answer the following questions in your journal, in complete sentences

1. How are all 3 organisms still alive after *3 months* in a sealed jar? Explain how this is possible, and include both photosynthesis and respiration in your answer.
2. What happens to the **carbon** in this closed system? Describe the path it takes, and make sure to mention any time the carbon becomes part of a new molecule
3. How does the carbon help all three organisms stay alive?