NAME:_____

CARBON CYCLE GAME

The key to understanding the cycles of matter in Ecology begins with identifying the *reservoirs* (where the matter is stored), the *residence times* (how long matter stays in any one reservoir), and the *fluxes* (how the matter moves from one reservoir to another).

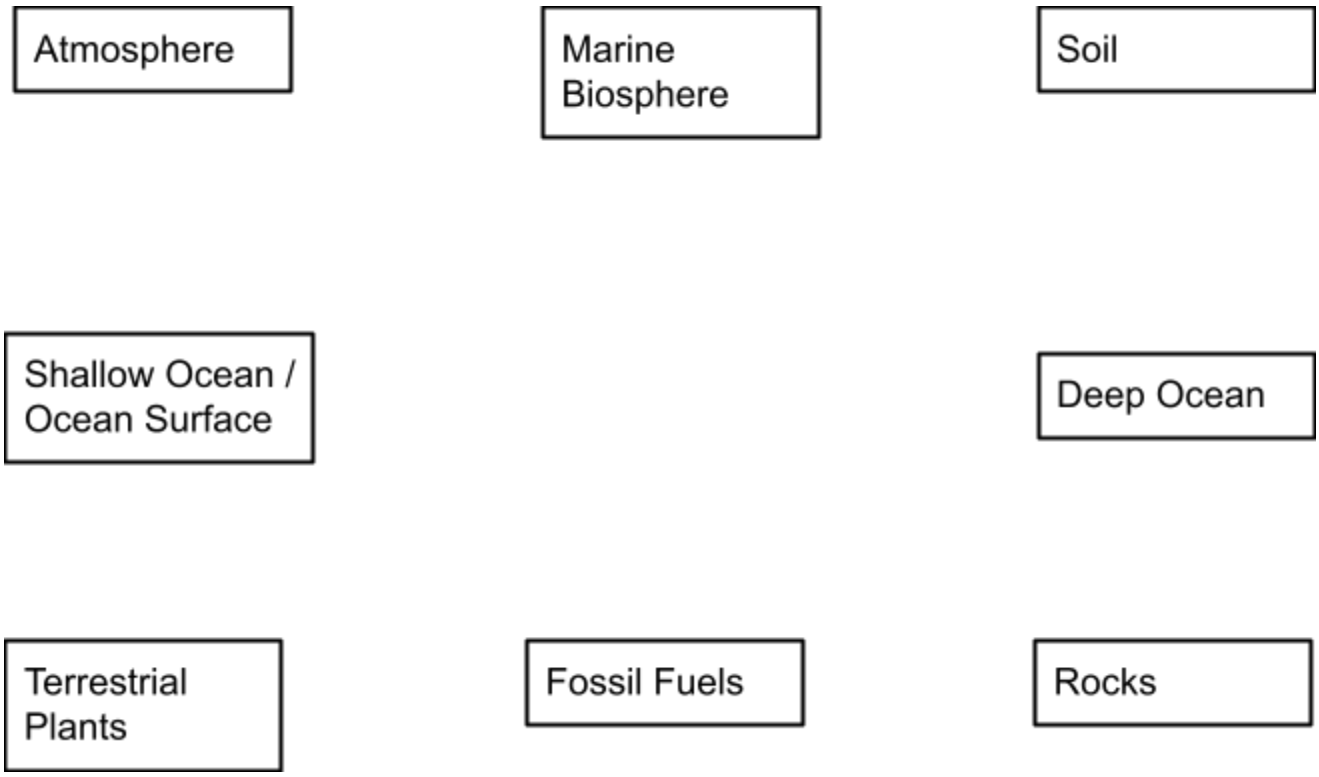
Instructions: Today you are going to play a game to learn about the carbon cycle, its reservoirs, residence times, and fluxes. By the end of this activity, you should be able to describe and explain how the carbon cycle has changed in the last 250 years.

Around the room, there are signs for each reservoir. Under the reservoir sign, there is a die and a set of instructions. ***You are a carbon atom!!*** You will be assigned to start at different reservoirs. Once you get to the reservoir, record your location on the chart below. Roll the die. Depending on the number you roll, you will go to different stations around the room. If you stay at a reservoir, RECORD THAT! Be sure to record your flux mechanism (how you got to the new reservoir). When you have visited every reservoir, go back to your seat and map your journey on the back of this page.

ROUND 1

STARTING RESERVOIR	WHAT HAPPENED?	ENDING RESERVOIR

Map of Your Carbon Cycle
(Draw arrows to show the pathway that your carbon molecule took)



Before Round 2: Analyze…

Which reservoir was your "most visited"?

Did you follow the same pathway more than once? Which on (s)?

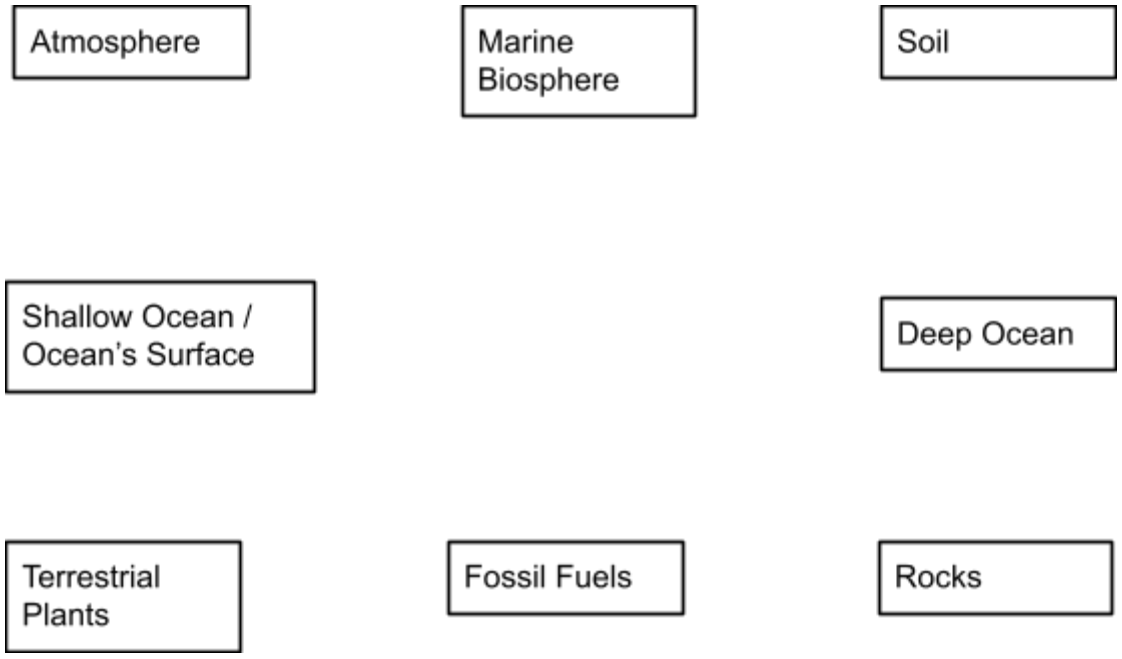
ROUND 2

The carbon cycle you just drew represents how carbon could have cycled through the Earth's Systems 250 years ago, before the Industrial Revolution. Things have changed. Now we are going to do the same exercise in the modern carbon cycle. Go to your original starting reservoir and wait for instructions.

STARTING RESERVOIR	FLUX MECHANISM	ENDING RESERVOIR

When you have filled in the table, go back to your seat and map your journey on the back of this page.

Map of Your Modern Carbon Cycle



Analyze:

1. What was your most visited reservoir for Round 2?

2. Did you follow the same pathway more than once? Which one(s)?

3. Did your carbon molecule stay in a reservoir for more than one roll? Which one(s)?

4. Compare this Carbon Cycle map to your map from Round 1. Identify similarities and differences. Use your knowledge of carbon & carbon sources to explain why these differences occurred.

Similarities between rounds	**Differences between rounds**
Why do you think these similarities occurred?	**Why do you think these differences occurred?**