

The Carbon Cycle Score Card

Student Name _____ Date _____

Record the places you travel as a carbon molecule.

Station/ Stop	What Happens	Destination
Example: <i>animals</i>	Example: <i>Exhaled by a bear</i>	Example: <i>Atmosphere</i>
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		
11. _____		
12. _____		

After you have traveled through the carbon cycle once, please complete this page.....

1. Using *another piece of paper*, draw a diagram showing your journey. Use a diagram similar to the food web with arrows showing your movement. Or, describe your journey with words. Use complete sentences.

2. **Carbon Sources:** substances or places that produce or release carbon dioxide or other carbon products.
Carbon Sinks: areas or organisms that absorb, dissolve or store carbon for later use by other things.

➤ **Identify the sinks and sources in your journey.**

My Carbon sinks:

My Carbon sources:

3. Reflect on what you have learned about the carbon cycle. Choose 3 questions and answer thoughtfully and thoroughly.
 - What role do plants fill in this cycle?
 - How could deforestation, loss of permafrost or removal of plants affect the carbon cycle?
 - What are fossil fuels and how are they formed?
 - What are greenhouse gases?
 - What could be done to reduce the amount of carbon dioxide in the atmosphere?

Station #1 Atmosphere

You are currently a molecule of carbon dioxide in the **atmosphere**.

If you roll Then you.....

1	STAY in the atmosphere to circulate and trap the sun's heat.
2	Are used by a plant for photosynthesis Go to PLANT
3	Are used by phytoplankton in the ocean. Go to OCEAN
4	STAY in the atmosphere to circulate and trap the sun's heat.
5	Are dissolved in the Carribbean Sea. Go to OCEAN.
6	Are used by a Spruce Tree for photosynthesis. Go to PLANT.

Station #2 Plants

You are currently a carbon molecule in the structure of the **plant**.

If you roll Then you.....

1	Are stored as cellulose in the cambium of a tree used to build a campfire, and are released during combustion. Go to ATMOSPHERE.
2	Are in the leaf of a tree that shed it's leaves in the Fall. Go to SOIL .
3	Are in the heart wood of living tree's trunk. STAY in Plant.
4	Are a carbon molecule in a yummy blueberry that was eaten by a hungry bear. Go to ANIMALS.
5	Are stored as cellulose in the new needles of a pine tree. STAY in Plant.
6	Are stored as cellulose in a fern that died and become buried deep in sediments before it could decompose. You are turning into part of a rock. Go to SOIL/ROCK.

Station #3

Animals

You are currently a molecule of carbon in an **animal**.

If you roll

Then you.....

1	Are part of a bear, which burps and exhales you into the air as CO ₂ . Go to ATMOSPHERE.
2	Were exhaled from an animal's lungs into the air as CO ₂ . Go to ATMOSPHERE.
3	Were part of a forest animal that died and is slowly decomposing. Go to SOIL/ROCK .
4	Are stored in the fat of an animal. STAY in animal.
5	Were part of an insect that died and fell to the ground where it will decompose. Go to SOIL/ROCK.
6	Are part of a cow that releases excess gas and releases you as methane gas. Go to ATMOSPHERE.

Station #4

Soil/Rock

You are currently a molecule of carbon dioxide in the **soil or in a rock**.

If you roll

Then you.....

1	Are charred in a ground forest fire and are now almost impossible to decompose. STAY in Soil.
2	Are trapped in bog sediments and eventually become natural gas. Go to FOSSIL FUELS.
3	Are buried in rock, changing into natural gas. Go to FOSSIL FUELS.
4	Are spewed out in a volcanic eruption. Go to ATMOSPHERE.
5	Are part of a limestone rock that gets mined for cement and then are released as a gas. (CO ₂) Go to ATMOSPHERE.
6	Are part of permafrost that is melting. You are released as a methane gas. Go to ATMOSPHERE.

Station #5

Fossil Fuels

Fossil fuels are a rich source of energy that has been created from carbon that has been stored for many millions of years.

If you roll... Then you.....

1	Are converted into gasoline for an automobile and released as CO ₂ during the combustion process. Go to ATMOSPHERE.
2	Are being burned in a coal power plant and are released as CO ₂ . Go to ATMOSPHERE
3	Are mined for coal and breathed in by a coal miner. Go to ANIMAL.
4	Are burned in a coal plant and combine with water vapor to make acid rain. You run off into the OCEAN. Go to OCEAN.
5	Are natural gas that has not yet been tapped and pumped above the ground. STAY in Fossil Fuels.
6	Are converted to petroleum and shipped through a long pipeline to a refinery, where you are released as carbon dioxide. (CO ₂) Go to ATMOSPHERE.

Station #6

OCEAN

You are currently a molecule of carbon in the **ocean**.

If you roll..... Then you.....

1	Are dissolved in seawater and could be here a while. STAY.
2	Have just reacted with other chemicals in water. STAY
3	Are part of a phytoplankton that was just eaten by a shrimp. Go to ANIMALS .
4	A whale just exhaled and released you into the air as carbon dioxide (CO ₂) Go to ATMOSPHERE
5	Are a plankton who just died and fell to the bottom of the ocean, becoming part of the sediments on the ocean floor. Go to SOIL/ROCK.
6	A fish just exhaled and released you into the water. STAY