



The Carbon Cycle Game

TEACHER INSTRUCTIONS

MATERIALS RECEIPT:

| | |
|------------------------|---------------|
| Foam Dice (at least 7) | \$8.00 (24pk) |
| Station Signs (7) | - - - |
| Student Passport Sheet | - - - |
| TOTAL | \$8.00 |

DIRECTIONS:

1. Designate areas in the room to place the station signs. Multiple signs at a station creates less congestion.
2. Place dice at each station. Multiple dice at a station creates less congestion.
3. Randomly assign students to a starting location, and have them form a line to roll the dice.
4. Instruct the first in line to roll for their next location, and to pass the dice to the next student.
5. Students must record where they are going + how they got there before they travel to the next location.
6. Students finish when they complete all 10 trips in their passport.

STATION SIGNS:

- Atmosphere
- Plants
- Animals
- Soil
- Fossil fuels
- Surface ocean
- Deep ocean



ATMOSPHERE

You are a carbon dioxide molecule floating in the air.



| If you roll... | Go to... | Because... |
|-----------------------|---------------------|--|
| 1 | Stay in atmosphere | Much of the carbon in the atmosphere circulates throughout the atmosphere. |
| 2 | Go to plant | A plant absorbs you through their stomata for photosynthesis. |
| 3 | Stay in atmosphere | Much of the carbon in the atmosphere circulates throughout the atmosphere. |
| 4 | Stay in atmosphere | Much of the carbon in the atmosphere circulates throughout the atmosphere. |
| 5 | Go to plant | A plant absorbs you through their stomata for photosynthesis. |
| 6 | Go to surface ocean | You naturally float down and dissolve into the top of the ocean. |



PLANT

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



| If you roll... | Go to... | Because... |
|-----------------------|-------------------------|---|
| 1 | Go to atmosphere | The plant dies, and you get released into the air by decomposers. |
| 2 | Stay in plant | You get converted into complex sugar molecules as the plant performs photosynthesis. |
| 3 | Go to animal | You become part of an animal as they consume the leaves and fruit of the plant. |
| 4 | Stay in plant | You get converted into complex sugar molecules as the plant performs photosynthesis. |
| 5 | Stay in plant | You get converted into complex sugar molecules as the plant performs photosynthesis. |
| 6 | Go to soil | The plant dies, and you get put into the soil by decomposers. |



ANIMAL

You are an organic carbon molecule in an animal.



| If you roll... | Go to... | Because... |
|-----------------------|------------------|--|
| 1 | Stay in animal | You get stored as fat in the animal. |
| 2 | Go to soil | The animal dies, and you get put back into the soil by decomposers. |
| 3 | Go to atmosphere | The animal respire, and breathes out carbon dioxide back into the air. |
| 4 | Stay in animal | A predator consumes you, and you become part of the new animal. |
| 5 | Go to atmosphere | The animal respire, and breathes out carbon dioxide back into the air. |
| 6 | Go to atmosphere | The animal dies, and you get released into the air by decomposers. |



SOIL

You are a carbon dioxide molecule dissolved in the soil.



| If you roll... | Go to... | Because... |
|-----------------------|--------------------|--|
| 1 | Stay in soil | Much of the carbon in soil is stored there. |
| 2 | Go to plant | A plant absorbs you through their roots for photosynthesis. |
| 3 | Go to fossil fuels | You have been trapped in the soil for so long that your carbon is now part of fossils. |
| 4 | Go to atmosphere | You naturally escape the soil and float up into the air. |
| 5 | Stay in soil | Much of the carbon in soil is stored there. |
| 6 | Go to fossil fuels | You have been trapped in the soil for so long that your carbon is now part of fossils. |



FOSSIL FUELS

You are a carbon molecule
trapped in fossils.



| If you roll... | Go to... | Because... |
|-----------------------|----------------------|--|
| 1 | Stay in fossil fuels | You are stored here for millions of years. |
| 2 | Stay in fossil fuels | You are stored here for millions of years. |
| 3 | Stay in fossil fuels | You are stored here for millions of years. |
| 4 | Go to atmosphere | Humans have extracted you from the ground and use you to power cars and factories. |
| 5 | Stay in fossil fuels | You are stored here for millions of years. |
| 6 | Go to atmosphere | Humans have extracted you from the ground and use you to power cars and factories. |



SURFACE OCEAN

You are a carbon dioxide molecule dissolved in the ocean's top layer.

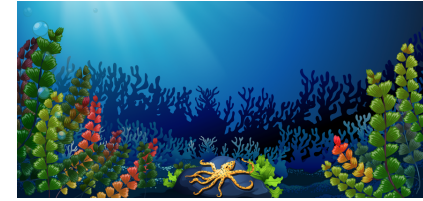


| If you roll... | Go to... | Because... |
|-----------------------|------------------------------|--|
| 1 | Go to deep ocean | You became part of an ocean organism that died and sunk to the bottom of the ocean. |
| 2 | Stay in surface ocean | Algae absorbs you while performing photosynthesis. |
| 3 | Go to atmosphere | An ocean organism releases you as they respire, and you escape and float up into the air. |
| 4 | Go to deep ocean | You became part of an ocean organism that died and sunk to the bottom of the ocean. |
| 5 | Stay in surface ocean | Phytoplankton absorbs you while performing photosynthesis. |
| 6 | Go to atmosphere | An ocean organism releases you as they respire, and you escape and float up into the air. |



DEEP OCEAN

You are a carbon molecule
deep down in the ocean.



| If you roll... | Go to... | Because... |
|-----------------------|---------------------|---|
| 1 | Stay in deep ocean | You became part of an ocean organism that died and sunk to the ocean floor. |
| 2 | Stay in deep ocean | You became part of an ocean organism that died and sunk to the ocean floor. |
| 3 | Go to surface ocean | An ocean organism has released you while they respire and you float up. |
| 4 | Go to surface ocean | An ocean organism has released you while they respire and you float up. |
| 5 | Go to fossil fuels | You have become part of a fossil, and humans extract you to power cars and factories. |
| 6 | Go to fossil fuels | You have become part of a fossil, and humans extract you to power cars and factories. |