Lodegepole Forest Carbon Cycle Game-Tickets:

1. CUT TICKETS INTO STRIPS

2. USE THE LETTERS IN THE BOTTOM RIGHT-HAND CORNER TO PLACE TICKETS INTO APPROPRIATE BOX.

*EXAMPLE:*

*TICKETS WITH “****DPA” in bottom right-hand corner***  *ARE PUT INTO THE DEAD PLANTS AND ANIMALS BOX.*

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| **You are in a dwarf mistletoe plant eaten by a chipmunk. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS**  **LP** |
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| **A wildfire is burning the living tree you are in. [combustion]**  **Go to the ATMOSPHERE.**  **LP** |
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| **You are in a pine tree parasitized by a dwarf mistletoe plant.**  **Stay in LIVE PLANTS and draw another ticket.**  **LP** |
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| **You are in a seed eaten by a white-breasted nuthatch. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS.**  **LP** |
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| **You are in a leaf eaten by a mule deer. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS.**  **LP**  **You are in a pine seed eaten by a chickaree squirrel. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS. LP** |
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| **You move from a pine tree needle to the woody tissue of the heartwood where you are stored for 80 years.**  **Stay in LIVING PLANTS**  **Count to 80 before drawing a new ticket. LP** |
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| **You move from a pine tree needle to the bark where you are stored for 25 years.**  **Stay in LIVING PLANTS.**  **Count to 25 before drawing a new ticket.**  **LP** |
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| **During the night, the pine tree releases you into the air in a CO2 molecule.**  **[respiration]**  **Go to the ATMOSPHERE. LP** |
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| **You are in the pine tree’s bark eaten by a porcupine. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS**  **LP** |
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| **The tree you are in is killed by pine bark beetles, crashing to the forest floor a year after the pine bark beetles attacked.**  **[death]**  **Go to DEAD PLANTS AND ANIMALS LP** |
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| **You are in CO2 molecules taken in from the air by a dwarf mistletoe plant on a sunny day.**  **[photosynthesis]**  **Go to LIVE PLANTS A** |
| As part of a the greenhouse gas molecule CO2, the length of your stay here can be variable.  Stay in the atmosphere. You will be here for 10 years, so count to 10 before drawing a ticket. A |
|  |
| As part of the greenhouse gas molecule CO2, the length of your stay here can be variable.  Stay in the atmosphere. You will be here for 25 years, so count to 25 before drawing a ticket. A |
|  |
| As part of the greenhouse gas molecule CO2, the length of your stay here can be variable.  Stay in the atmosphere. You will be here for 100 years, so count to 100 before drawing a ticket. A |
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| **A lodgepole pine tree in the sunshine has removed you from the air to make a sugar molecule. [photosynthesis]**  **Go to LIVE PLANTS**  **A** |
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| **You are in CO2 molecules that have moved from the air into a lake, reacting with water molecules to form carbonic acid (H2CO3). [diffusion]**  **Go to SURFACE WATER A** |
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| **You are in a CO2 molecule absorbed by a raindrop falling into a pond. [diffusion]**  **Go to SURFACE WATER**  **A** |
|  |
| **You are in a CO2 molecule swept into the air by a breeze passing over a lake. [diffusion]**  **Go to the ATMOSPHERE**  **SW** |
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| **You are in a CO2 molecule moving into the air from a stream on a hot summer’s day. [diffusion]**  **Go to the ATMOSPHERE SW** |
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| **You are green algae floating on the surface of the pond. During the day, you take in CO2 that has diffused into the surface water.**  **[photosynthesis]**  **Stay in surface waters. Choose another ticket. SW** |
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| **You are green algae floating on the surface of the pond. You release CO2 to the air.**  **[respiration]**  **Go to ATMOSPHERE**  **SW** |
|  |
| **You are in deer poop which is consumed by a honey mushroom.**  **[decomposition]**  **Go to DECOMPOSERS**  **AW** |
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| **You are in bear poop consumed by worms and fungi. [decomposition]**  **Go to DECOMPOSERS**  **AW** |
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| **You are released into the air by soil microbes(bacteria and fungi) as they decompose dead and decaying leaves in the soil. [respiration]**  **Go to the ATMOSPHERE. D** |
|  |
| **A pinedrop plant consuming soil mycorrhizal fungi releases you to the air in a CO2 molecule. [respiration]**  **GO to ATMOSPHERE D** |
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| **You are in a honey mushroom eaten by a black bear. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS**  **D** |
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| **You are in worm poop left in the soil by worms as they consume small bits of decomposed plants. [decomposition]**  **Go to SOIL**  **D** |
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| **You are in a chipmunk eaten by a sharp-shinned hawk. [ingestion]**  **Go to LIVE ANIMAL PREDATORS**  **LAC** |
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| **You are in the muscle tissue of a chickaree squirrel which is eaten by a pine marten.**  **[ingestion]**  **Go to LIVE ANIMAL PREDATORS**  **LAC** |
| **The chipmunk you are within has just died from a viral infection.**  **[death]**  **Go to DEAD PLANTS AND ANIMALS**  **LAC** |
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| **You are in urine released by a urinating mule deer. [excretion]**  **Go to ANIMAL WASTE LAC** |
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| **You are in a pine beetle eaten by a woodpecker. [ingestion]**  **Go to LIVE ANIMAL PREDATORS**  **LAC** |
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| **You are in a bird dropping released as a chickadee flutters by.**  **[excretion]**  **Go to ANIMAL WASTE**  **LAC** |
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| **You are in a beetle eaten by a southern red-backed vole. [ingestion]**  **Go to LIVE ANIMAL PREDATORS.**  **LAC** |
|  |
| **You are in a beetle eaten by a southern red-backed vole. [ingestion]**  **Go to LIVE ANIMAL PREDATORS.**  **LAC** |
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| **You are in bacteria living in the nose of a black bear.**  **Stay inside the bear and draw another ticket.**  LAP |
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| **The sharp shinned hawk you are within has died of old age.**  **[death]**  **Go to DEAD PLANTS AND ANIMALS**  **LAP** |
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| **You are released as a CO2 molecule by a growling black bear.**  **[respiration]**  **Go to the ATMOPSHERE**  **LAP** |
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| **You are in a fat cell inside a downy woodpecker eaten by a sharp-shinned hawk.**  **[ingestion]**  **Stay inside the downy woodpecker and draw**  **another ticket. LAP** |
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| **You are in a pine marten which is killed in a fall from a very tall tree.**  **[death]**  **Go to DEAD PLANTS AND AMIMALS**  **LAP** |
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| **You have just been pooped out in a dropping by a soaring sharp-shinned hawk.**  **[excretion]**  **Go to ANIMAL WASTE**  **LAP** |
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| **FIRE! The dead tree you are in is burned in a campfire. [combustion]**  **Go to the ATMOSPHERE**  **DPA** |
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| **The root cells of a Lodgepole Pine tree release you into the soil.**  **[exudation]**  **Go to the SOIL**  **LAP** |
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| **You are in a dead pine needle decomposed by a spotted coralroot plant.**  **[decomposition]**  **Go to DECOMPOSERS**  **DPA** |
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| **Fire! The dead tree you are in is chopped up and burned by a human to stay warm. [combustion]**  **Go to the ATMOSPHERE.**  **DPA** |
| **You are in a dead pine seed eaten by a chickaree squirrel. [ingestion]**  **Go to LIVE ANIMAL CONSUMERS**  **DPA** |
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| **You are in rotten wood in the forest soil consumed by soil bacteria.**  **[decomposition]**  **Go to DECOMPOSERS**  **DPA** |
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| **You are taken up from buried dead wood consumed by a honey mushroom.**  **[decomposition]**  **Go to DECOMPOSERS**  **DPA** |
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| **You are absorbed by mycorrhizal fungi growing on tree roots. The fungi exchange nutrients with the trees in exchange for the tree’s sugars exuded from the tree’s roots. [absorption/consuming]**  **Stay inside the fungi**  **and p**ick another ticket. S |
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| You are eaten by a southern red-backed vole grubbing in the soil for insects and worms. [ingestion]  Go to LIVE ANIMAL PREDATORS  S |
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| You are inside soil bacteria. As the bacteria busily decompose rabbit poop for food and nutrients, they release CO2 to the atmosphere. [Soil Respiration]  Go to the ATMOSPHERE S |
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| You are in dissolved organic carbon-compounds (DOC) from decayed leaves in the soil. You can stay in the soil DOC for hundreds of years.  Stay in the soil then pick another ticket. S |
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| You are in bits and pieces of decayed plants and animals in the soil. Rain washes you away into a nearby stream.  Go to SURFACE WATER S |
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