CO_2 Mapping Carbon (1 of 2)

NAME DATE

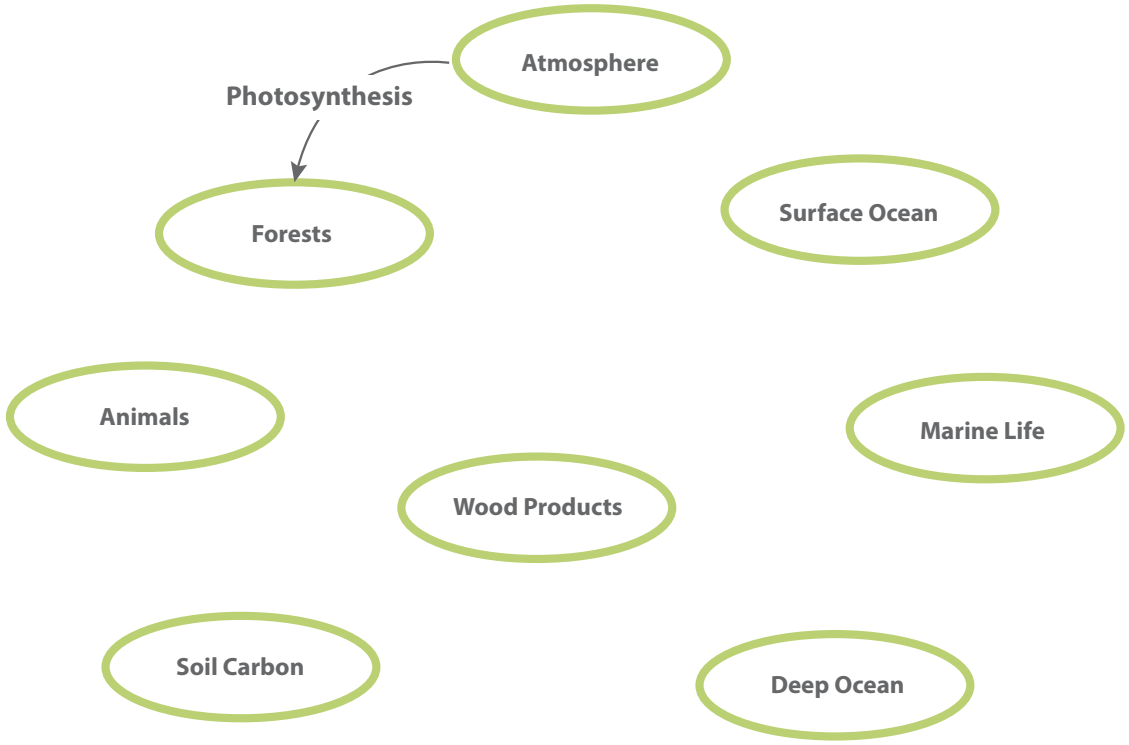
1. Use a large sheet of paper and markers to create a carbon cycle that combines the path that each group member experienced during the simulated carbon cycle. Use ovals or circles to represent the **carbon pools.** Use arrows to show how you moved from pool to pool, and label each arrow with the **carbon flux** that took you to the next pool.

   For example, one or more students in your group probably went from the atmosphere to the forest through photosynthesis. This means you would draw one oval labeled "atmosphere" and one oval labeled "forests." Then you would connect them with an arrow labeled "photosynthesis."

   Carbon fluxes that you may have experienced include:

   Breaks Down
   Burns (Combustion)
   Dissolves
   Eaten (Consumption)
   Leaves Solution
   Ocean Mixing/Circulation
   Photosynthesis
   Respiration (Plant, Soil, Animal)
   Sequestration
   Waste Production

Example Diagram for Biological Carbon Cycle



CO_2 Mapping Carbon (2 of 2)

NAME DATE

2. If needed, add additional arrows to represent any realistic pathways (fluxes) between pools that were not experienced by your group members. This diagram represents the **biological part** of the carbon cycle.

3. Add three new carbon pools to the bottom of your group diagram to represent the **geological part** of the carbon cycle: Fossil Fuels, Ocean Sediments, and Carbonate Rock / Limestone. Then use the following fluxes to describe how carbon moves between the new and existing carbon pools: Heat and Compression, Burning (Combustion), Volcanism (Outgassing), Weathering, Rock Formation, and Sinking.

4. According to your diagram, what are two ways carbon is removed from the atmosphere? List these fluxes and the pools.

5. How might each of these pools be affected by increased amounts of carbon dioxide in the atmosphere?

6. How could we change these pools and also remove more carbon from the atmosphere? What might be the limitations of managing these pools in this way?

7. What are the implications of developing a piece of land that used to be forested, so that trees no longer dominate the landscape?