Name:_____ **Date:**_____ **Class:**___

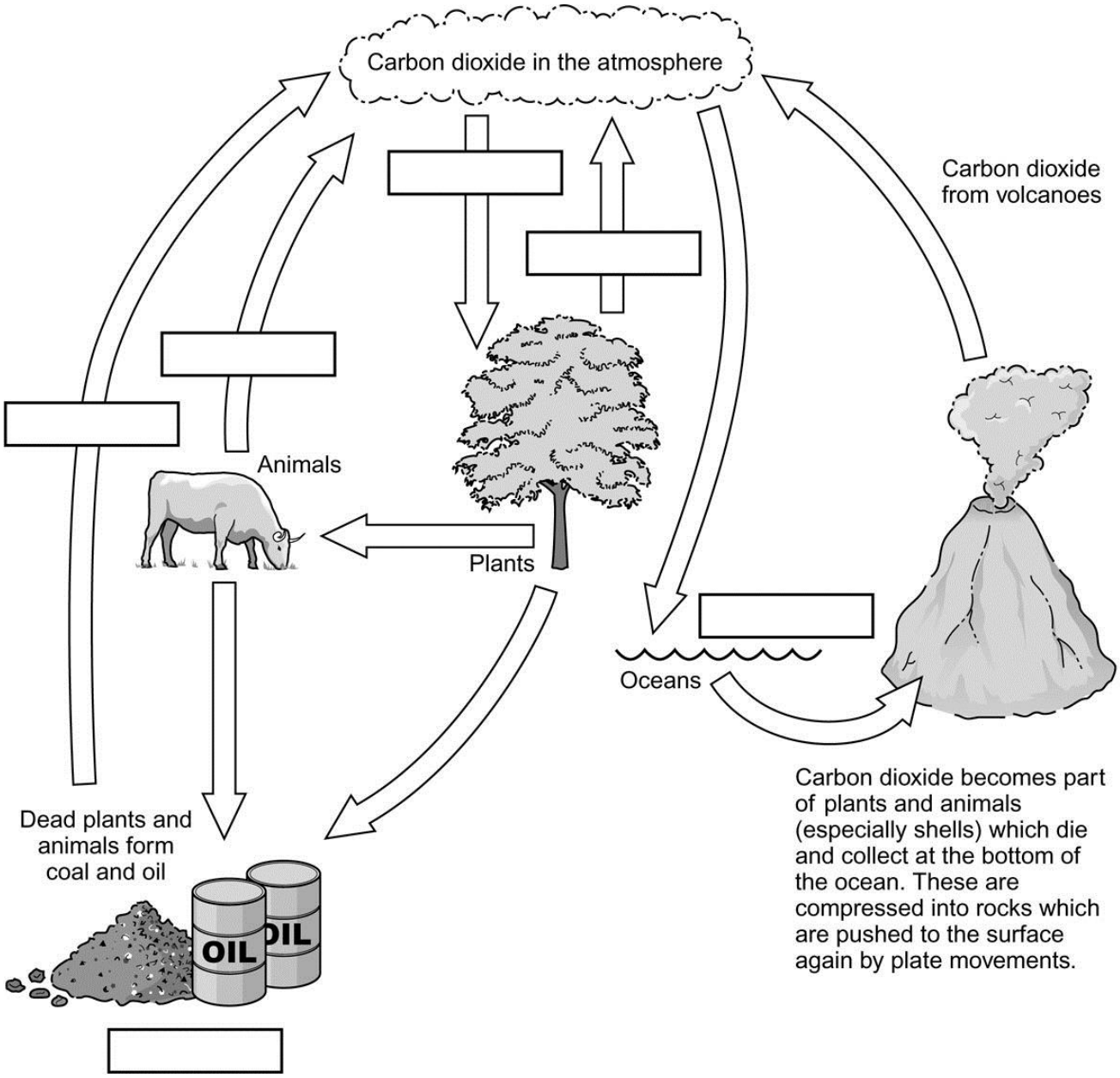
Diagramming the Carbon Cycle

1. Some carbon is released into the air during the burning process (*combustion*). A forest fire releases CO2 when it burns a tree, and leaves behind the remaining carbon in the form of burned trees.
2. The dead trees gradually decompose, releasing still more carbon into the air.
3. Erosion can wash this carbon into the water.
4. When plants grow, they "drink" in this carbon from the air as CO2 gas and use the process of photosynthesis to create food in the form of sugars and oxygen, starting the process over.
5. Carbon also exists in the world's oceans. Just like plants on land, phytoplankton in the ocean convert dissolved CO2 into sugars and release oxygen as a byproduct.
6. Phytoplankton are a food source for many marine species (e.g.— shellfish). Carbon atoms travel from phytoplankton to clams to the otters that eat them and so on.
7. When sea animals die, they often sink to the ocean floor, either taking carbon with them where it slowly decomposes and re-enters the atmosphere…
8. Or the carbonate shells are deposited on the ocean floor to form limestone.

Directions: Fill in the diagram of the carbon cycle as it relates to the ocean and landscape.

Include and label the following features (see *fig. 10*, p. 124 Holt Environmental Science for a model):

- Atmospheric carbon dioxide
- CO2 dissolved in water
- Plant and animal respiration
- Photosynthesis
- Oxygen
- Decomposition
- Combustion (human and natural)
- Limestone (*carbonates*, carbon sink)
- fossil fuels (natural gas, oil)
- erosion


Carbon dioxide in the atmosphere
Carbon dioxide from volcanoes
Animals
Plants
Oceans
Dead plants and animals form coal and oil
OIL
OIL
Carbon dioxide becomes part of plants and animals (especially shells) which die and collect at the bottom of the ocean. These are compressed into rocks which are pushed to the surface again by plate movements.