# LAB: Waste and its effect on atmospheric carbon dioxide

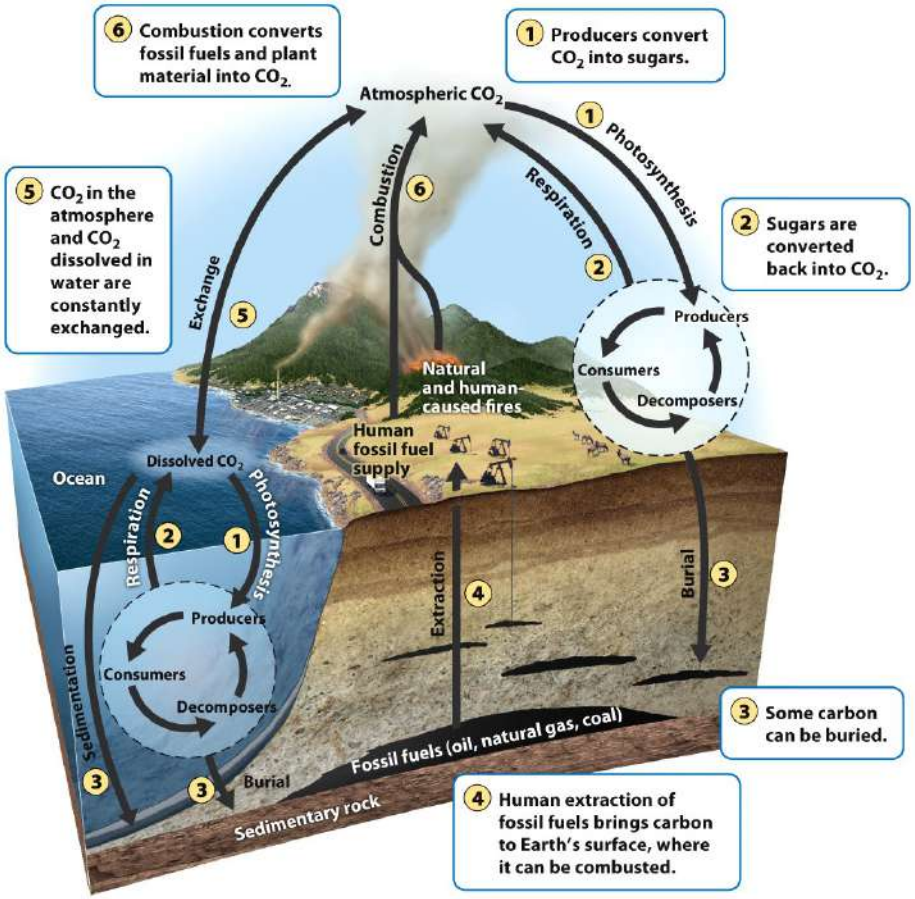


**Figure 3.11**
*Environmental Science*


- P. 68 Env. Sci book
- Obj. to evaluate the effect of the presence of pollutants such as sewage, agricultural runoff etc. on atmospheric carbon dioxide.

# Procedure

1. In pairs, Get a GLX and a $CO_2$ sensor probe.
2. Turn on your GLX, plug in your $CO_2$ sensor probe. Note the value in the air.
3. Using a graduated cylinder, add 5 ml of tap water to the 250 –ml plastic $CO_2$ collection bottle.
4. Add 10 ml of milk to the 250- ml gas sampling bottle and set aside.
5. Noting the time, add 1ml (1/4 tsp) of yeast mixture to the 250ml gas sampling bottle and swirl to mix.
6. Connect the probe to the bottle and record the data every minute for the next 4 minutes.
7. Now, repeat the 1 – 6 steps, but add 30ml of milk.

# Data:

$CO_2$ level in the classroom _____

| Time | 0 (Control) minutes | 1 minute | 2 minute | 3 minute | 4 minutes |
|---|---|---|---|---|---|
| 10ml Milk [$CO_2$] | | | | | |
| 30ml Milk [CO2] | | | | | |

Qualitative data: Did you feel heat from the 250ml gas sampling bottle? Why

Lab due: Thursday April.24th

# Waste & $CO_2$ Lab

Due Thursday

# Topics/ Concepts discussed

- Throw away society & waste
- Planned Obsolescence
- Decomposition – microrganism
- Landfill Structure – clay liner, methane collectors, leachate collection
- Global Warming
- BMP – Best Management Practices
- Carbon Sink/ Carbon Flux & Carbon Cycle

# Topics/ Concepts discussed

- Ocean Acidification
- Point & nonpoint Source Pollution
- Ozone Layer? (Affect of CFC's not $CH_4$ or $CO_2$)
- Remediation
- Agricultural Runoff
- Industrial Revolution
- Photosynthesis & Cellular Respiration
- Sustainability

# Topics/ Concepts discussed

- Methane Production
- Fossil Fuels
- Biological Assimilation
- Waste Management
- Leaching
- Anthropogenic Activities
- Septic Tank
- Metabolism

# Topics/ Concepts discussed

- Treatment Plant
- Aerobic & Anaerobic Organisms
- Oxidation
- Sewage Treatment
- Biodegradable Material
- Biofiltration
- Natural & Constructed Wetlands
- Greenbelts
- Treatment Ponds
- Riparian Areas