

Biogeochemical Cycles

-unlike energy which "flows through" an ecosystem to eventually end up as heat, matter 'cycles' within all ecosystems

-matter on earth is considered either '*organic*' or '*inorganic*'

-matter can never be destroyed, it can only be changed in form.

Ex: wood burning

-three main cycles to be discussed

Water Cycle

Carbon Cycle

Nitrogen Cycle

Carbon Cycle

Photosynthesis and respiration

Inorganic carbon sinks

-carbon dioxide in the atmosphere

-dissolved carbon dioxide in the ocean

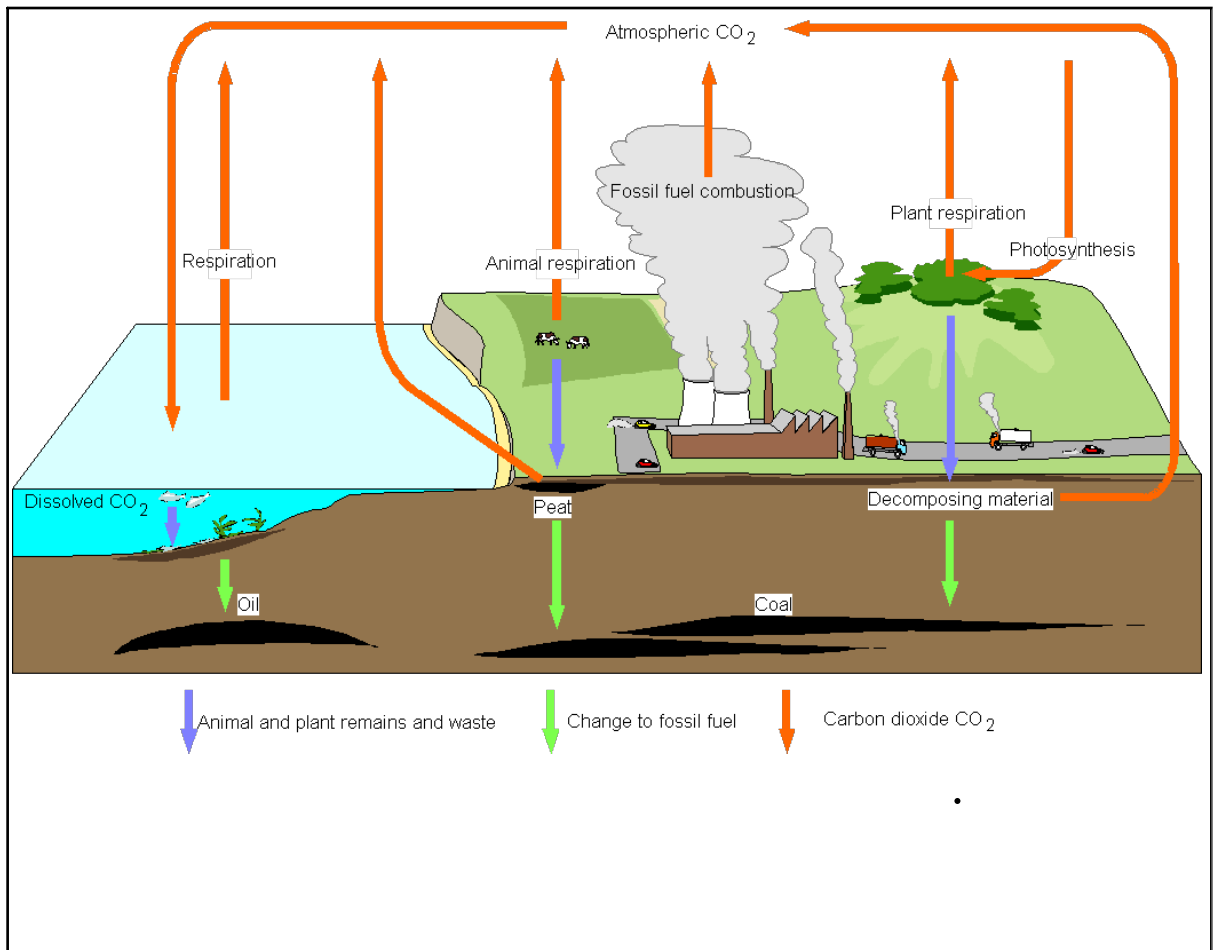
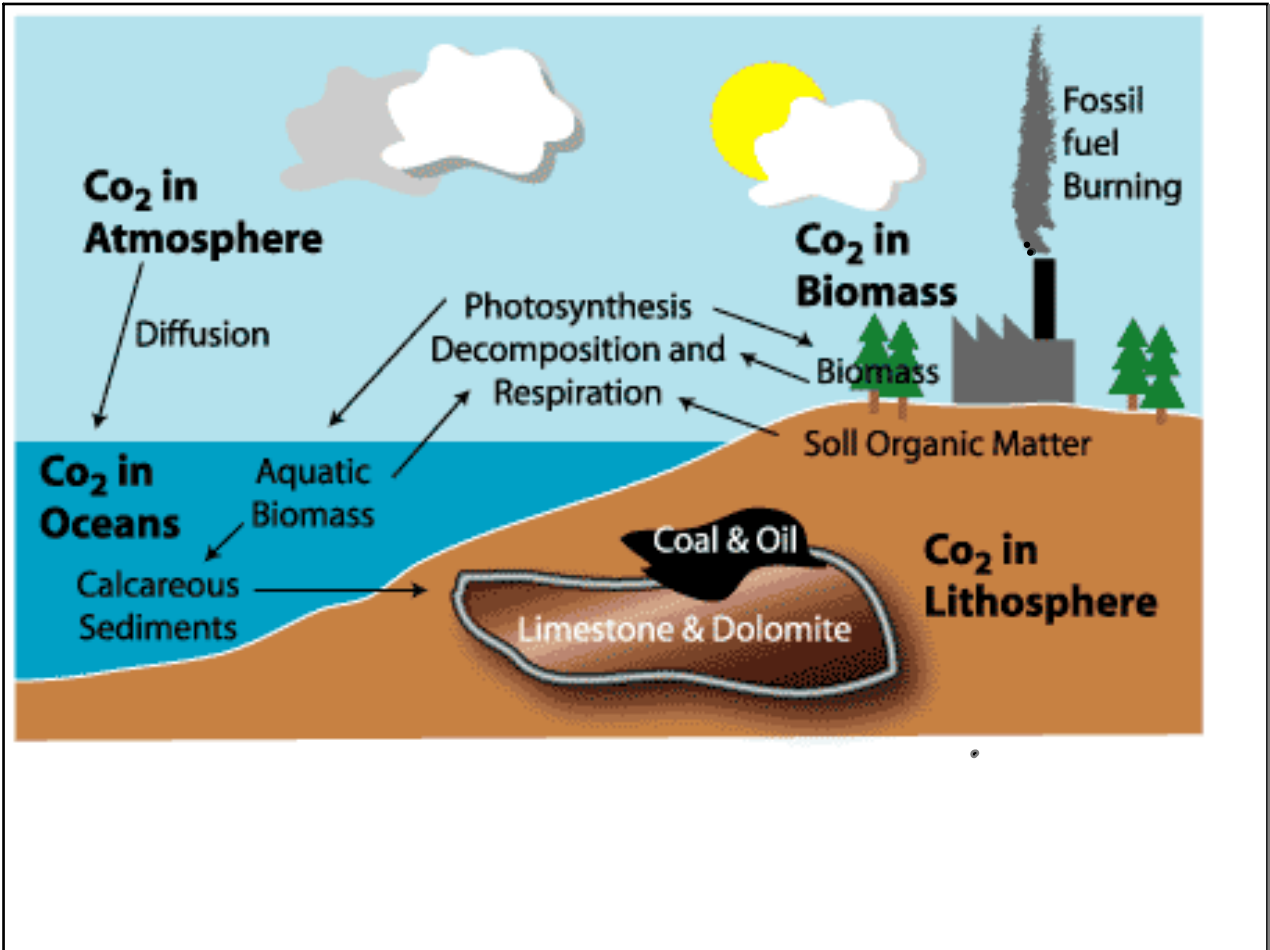
-calcium carbonate in shells of living creatures and limestone deposits

Organic carbon sinks

-bodies of living things

-peat bogs

-fossil fuel deposits



Nitrogen Cycle

- nitrogen gas makes up 79% of the atmosphere
- we cannot use it as gaseous N_2 , since it is very stable and not very reactive
- must be supplied to organisms in the form of a nitrate ion

Nitrogen Fixation

- some nitrogen is *fixed* in the earth's atmosphere by lightning
- most of the fixation occurs through bacteria
- legumes are included in crop rotations to restore nitrogen from previous crop

Denitrification

- bacteria release nitrogen gas to the atmosphere thru the decay process

