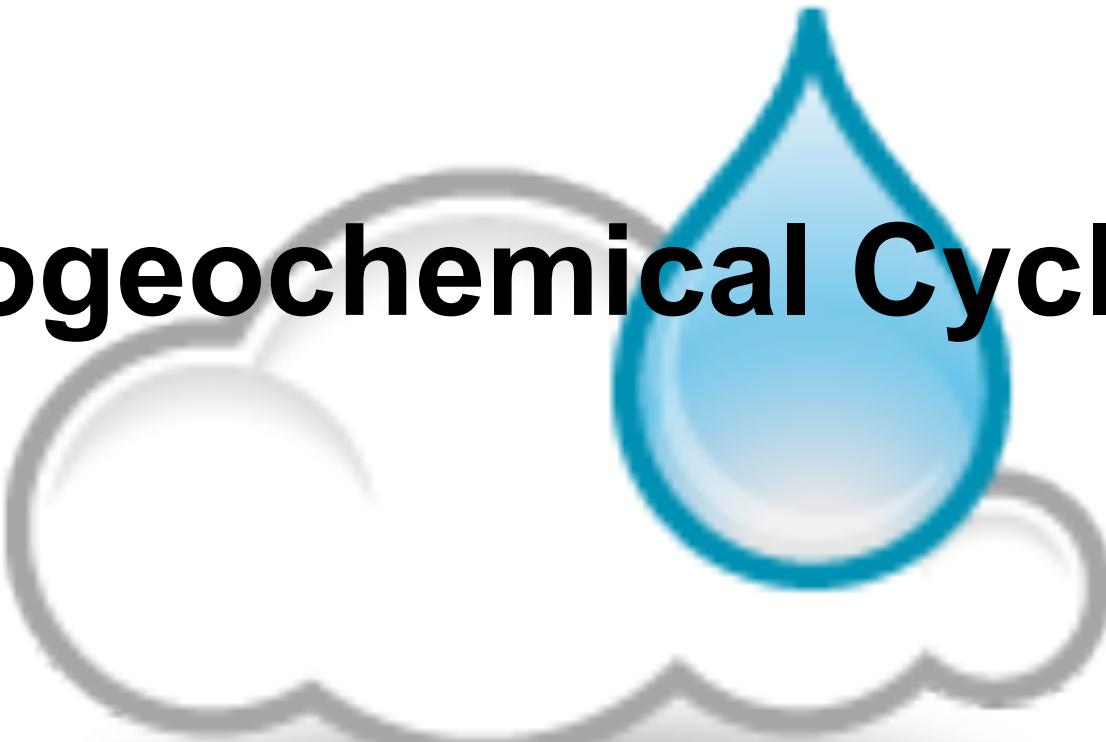


Biogeochemical Cycles



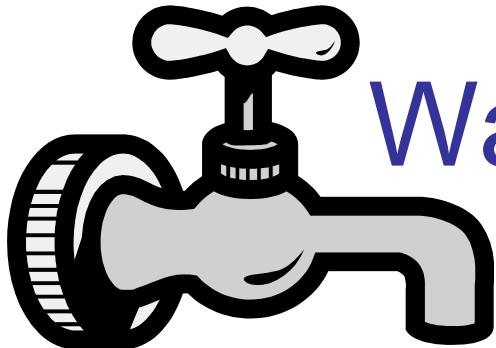
The Water Cycle

Continuous movement of water from the atmosphere to the Earth's surface and back again

- Evaporation- liquid water changes into water vapor
 - Transpiration- plants give off water vapor into the atmosphere
 - Evaporation + transpiration = evapotranspiration
- Condensation- water vapor cools and changes into tiny water droplets
- Precipitation- water falls from the clouds to the Earth.

Water Cycle

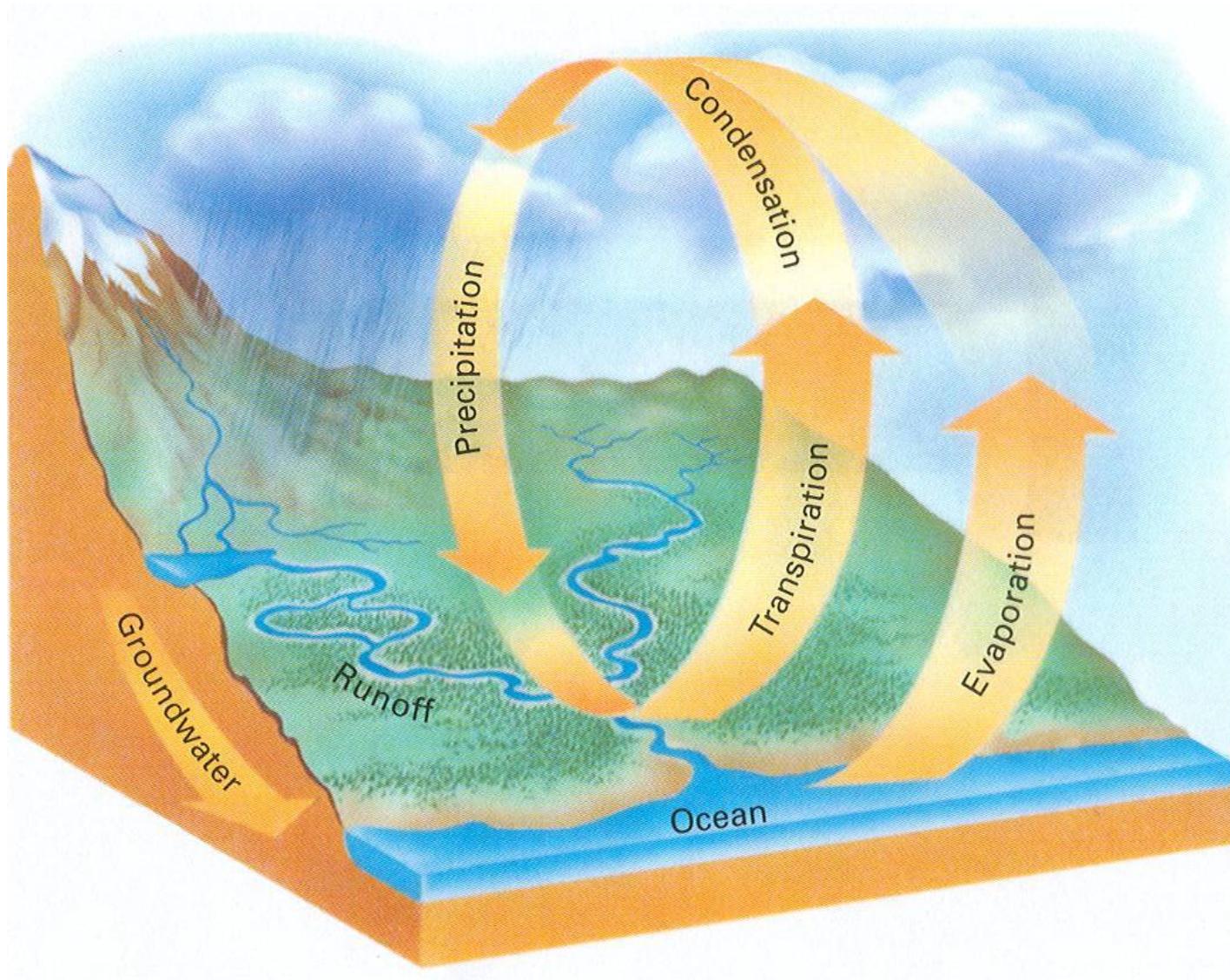




Water Conservation

- As populations grow, demand for water increases
- Scientists have identified two approaches to ensure that enough freshwater is available in the future
 - Conservation- educating people about using less water and enacting laws to reduce pollution
 - Desalination- the process of removing salt from ocean water

The Water Cycle

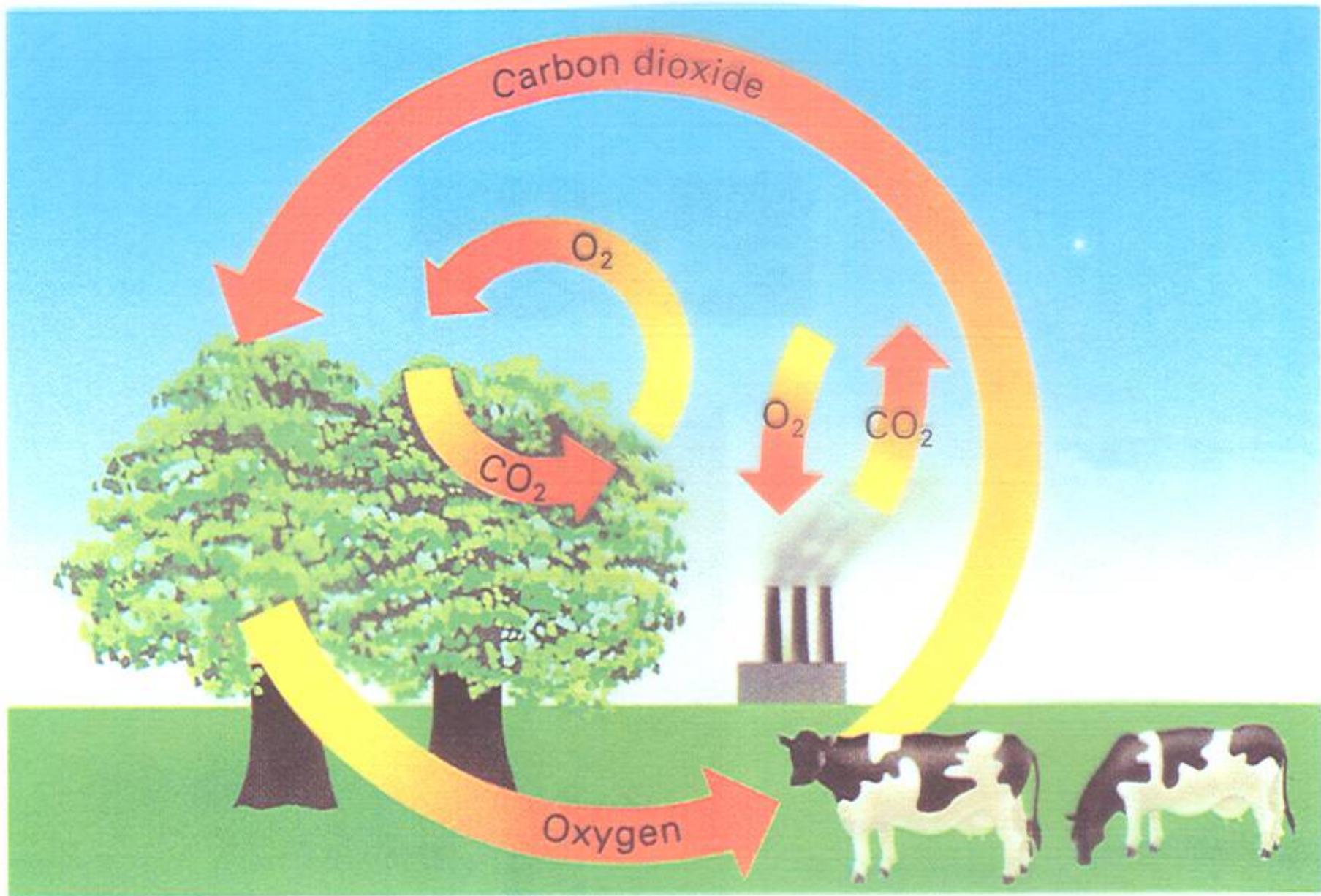


The Carbon Cycle

- In the atmosphere, carbon is present as carbon dioxide gas
- Carbon dioxide is released into the atmosphere by four processes
 - Volcanic activity
 - Respiration
 - Human activities (burning of fossil fuels)
 - Decomposition of organic matter

The Carbon Cycle

- Plants take in the carbon dioxide and build carbohydrates
- Carbohydrates are passed to animals and other consumers
- Carbon is also found in the ocean or organisms as calcium carbonate (shells or bones)
 - The compounds break down after time
 - Carbon returns to the atmosphere



The Nitrogen Cycle

- Nitrogen moves from air to soil, to plants & animals, and back again to the air
- Nitrogen is removed from air by nitrogen-fixing bacteria in a process called nitrogen fixation
 - These live in the soil & roots of certain plants
 - They change nitrogen from the air into nitrogen compounds that plants can use

The Nitrogen Cycle

- Animals eat the plants and the nitrogen compounds enter their bodies
- The compounds are returned to the soil through excretions or by decay of dead organisms
- Within soil, denitrification releases nitrogen and returns it to the atmosphere

