3-4 Cycles of Matter

Recycling in the Biosphere

* Unlike the one-way flow of energy, within and between
  + Energy is needed to pass matter

Processes

* Biological
* Geological
* Chemical and Physical
* Human Activity

Water Cycle

* The movement of water between being a
* Precipitation –
* Evaporation and transpiration (evaporation )
* Condensation – in clouds

Nutrient Cycles

* that an organism needs for
* Different that are needed to receive carbon, nitrogen, and phosphorus through the biosphere

Carbon Cycle

* Carbon transfers between being in , dissolved in , and found in the
* Biological 🡪 is used for and cellular respiration
* Human 🡪 Forrest fires and use of put into the atmosphere
* Geological 🡪 Carbon found in
* Physical/Chemical 🡪CO2 is in rainwater and ocean

Nitrogen Cycle

* Nitrogen is used to make (DNA, RNA)
* Most gas in the atmosphere, found in – only certain bacteria can use it
* Plants on their roots have which
  + Converts nitrogen into usable
  + We and use the nitrogen
* Denitrification 🡪

Phosphorus Cycle

* Not as – also used to make DNA and RNA
* Form in rock and soil materials (introduced when rocks
  + May be introduced by
* Plants and it moves through the food web

Nutrient Limitations

* Primary are limited by the
  + Limiting nutrient
* Fertilizers contain amounts of
* Specialty fertilizers may contain small amounts of
* Which element is not provided in fertilizers (pg 86) and why?