

STUDY QUESTIONS:

What is a biogeochemical cycle? (DOK1)

How does carbon move through the ecosystem? (DOK2)

Compare and contrast photosynthesis and cellular respiration. (DOK3)

NOTES:

- A _____ is the movement of a particular chemical through the biotic and abiotic parts of an ecosystem.
- Cycles are driven directly or indirectly by _____ and gravity.

Carbon Cycle

Carbon-based organic molecules are essential to all organisms.

- The _____ moves _____ from the atmosphere, through the food web, and returns to the atmosphere.
- CO₂ is taken up via _____ and released via _____.
- Volcanoes and the burning of _____ contribute CO₂ to the atmosphere.

Water Cycle

Water is essential to all organisms. Organisms all have bodies made mostly of water.

- The _____, or water, cycle is the circular pathway of water on Earth.
- Water moves by the processes of _____, _____, _____, and movement through _____ and _____.
- _____% of the biosphere's water is contained in the oceans, _____% is in glaciers and polar ice caps, and _____% is in lakes, rivers, and groundwater.

Nitrogen Cycle

Nitrogen is a component of amino acids, proteins, and nucleic acids.

- The _____ mostly takes place _____.
- _____: bacteria (in soil or plant roots) convert N₂ gas into ammonia.
- _____ released into soil is transformed into _____.
- _____ change the ammonium into nitrate.
- _____ returns Nitrogen back to the soil.

Phosphorus Cycle

Phosphorus is required by all organisms (in nucleic acids, membranes, ATP).

- The _____ takes place at and below _____.
- _____ is released by the weathering of rocks.
- _____ returns phosphorus to the soil.
- Phosphorus leaches into _____ from the soil and is locked in _____.
- _____ and _____ add phosphorus into the environment.

Biology Cornell Notes: "Cycles of Matter"

DATE:

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NOTES:

Human Influences on the Cycles of Matter

- Water _____ from lakes and streams
- _____vegetation (forests and other plants)
- Fill wetlands
- Burning _____ and wood
- Agriculture
- _____of animal wastes, fertilizer, sewage treatment

SUMMARY: