The Carbon Cycle

Featuring Cellular Respiration and Photosynthesis



Thursday, September 22, 16



* Plants use carbon dioxide (CO₂) and water (H₂O) to make sugar (C₆H₁₂O₆) and oxygen (O₂)

* Word equation:

* Chemical Equation

$H_2 O + CO_2 + E \longrightarrow C_6 H_{12} O_6 + O_2$

Cellular Respiration

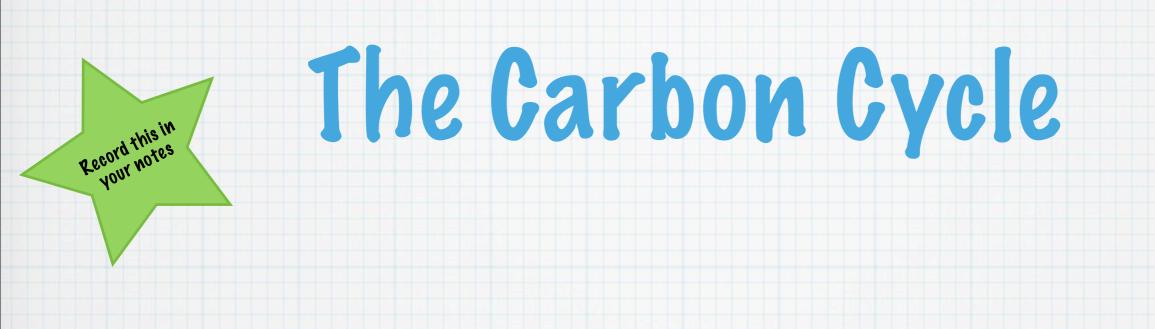
- * The oxygen produced by photosynthesis is used up by humans and animals in a process called cellular respiration
- * Word equation:
 - ★ Oxygen + Sugar → Carbon Dioxide + Water + Energy
- * Chemical Equation

$$* C_6H_{12}O_6 + O_2 \longrightarrow H_2O + CO_2 + E$$

Biogeochemical Cycles

- * The particles that make up matter cannot be created or destroyed.
- * This means that all nutrients must be obtained from chemicals that already existed in the environment.





* While large quantities of carbon cycle through cellular respiration and photosynthesis, much of it is stored in reservoirs.

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6 Steps in the Carbon Cycle







- * 4) Photosynthesis
- * 5) Burning



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Inorganic Carbon Storage

- * Carbon in INORGANIC forms is stored in three places
 - * Gas: as CO₂, will be used by plants
 - Liquid: as dissolved CO₂, will be used by phytoplankton and aquatic plants
 - * Solid: as carbonate

Organic Carbon Storage

- * Carbon in organic matter is stored in organisms.
- Organic carbon must be added back into the cycle by decomposers.
- * Organic carbon may also become fossil fuels.

Human Activity and the Carbon Cycle

- * Human factors can have dramatic effects on the carbon cycle
 - * Burning fossil fuels release stored carbon into the atmosphere.
 - * This causes organic carbon to be released much quicker than it normally would have.

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