

The background features a stylized coral reef scene. On the left, there is a green, branching coral structure with dark teal circular openings. On the right, there is an orange, fan-shaped coral structure. The background is light blue with several circular bubbles of varying sizes scattered throughout.

What are some things that get cycled
in nature and ecosystems?

Review of Notes



Conservation of Mass

Matter is neither created nor destroyed, it is just changed.

Conservation of Energy

Energy is neither created nor destroyed, it is just transformed from one type to another.

The background features a light blue color palette with stylized coral in orange, red, and green. There are several light blue circles of varying sizes scattered throughout, resembling bubbles. The text is arranged in a central layout with the title at the top and three cycle descriptions below it.

Review of Cycles

Carbon Cycle

Producers, consumers, and decomposers all exchange carbon through their lives

Oxygen Cycle

Photosynthesis and water cycle oxygen throughout the ecosystem

Nitrogen Cycle

The air, soil, and biotic factors move nitrogen through an ecosystem

The heat of the sun provides energy to make the water cycle work.

The sun evaporates water from the oceans into water vapor.

This invisible vapor rises into the atmosphere, where the air is colder.

The water vapor condenses into clouds.

Volcanoes emit steam, which forms clouds.

Air currents move clouds all around the Earth.

Water droplets form in clouds, and the droplets then fall to Earth as precipitation (rain and snow).

In cold climates, precipitation builds up as snow, ice, and glaciers.

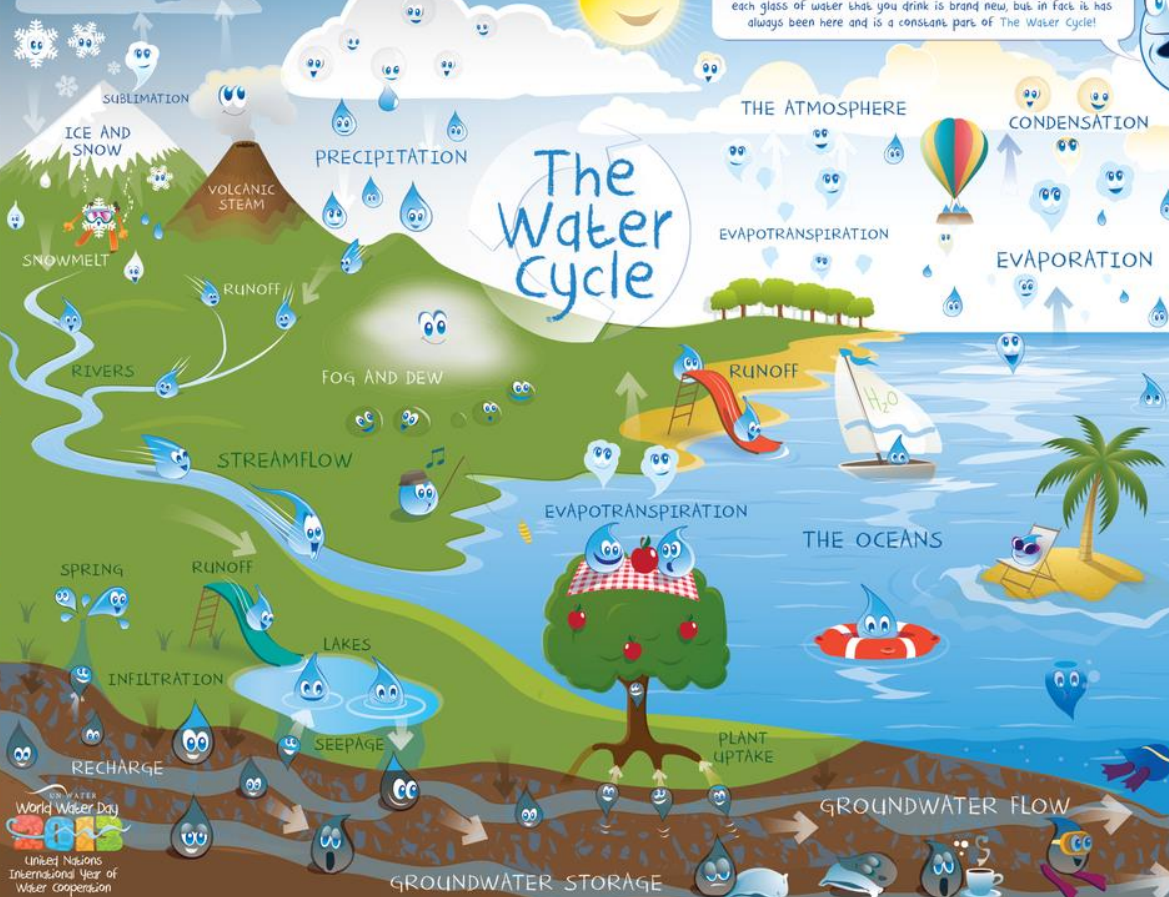
Snow can melt and become runoff, which flows into rivers, the oceans, and into the ground.

Some ice evaporates directly into the air, skipping the melting phase (sublimation).

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Water droplets form in clouds, and the droplets then fall to Earth as precipitation (rain and snow).

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You may think that every drop of rain that falls from the sky, or each glass of water that you drink is brand new, but in fact it has always been here and is a constant part of The Water Cycle!



Rainfall on land flows downhill as runoff, providing water to lakes, rivers, and the oceans.

Some rain soaks into the ground, as infiltration, and if deep enough, recharges groundwater.

Water from lakes and rivers can also seep into the ground.

Water moves underground because of gravity and pressure.

Groundwater close to the land surface is taken up by plants.

Some groundwater seeps into rivers and lakes, and can flow to the surface as springs.

Plants take up groundwater and evaporate, or transpire, it from their leaves.

Some groundwater goes very deep into the ground and stays there for a long time.

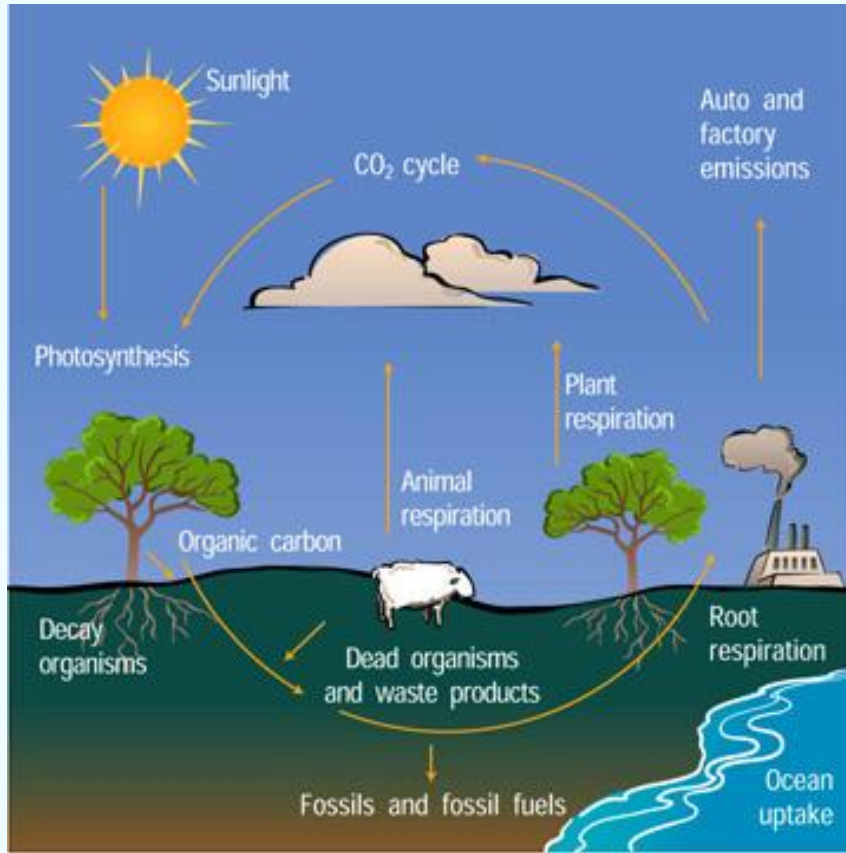
Groundwater flows into the oceans, keeping the water cycle going.

World Water Day
2013
United Nations
International Year of
Water Cooperation

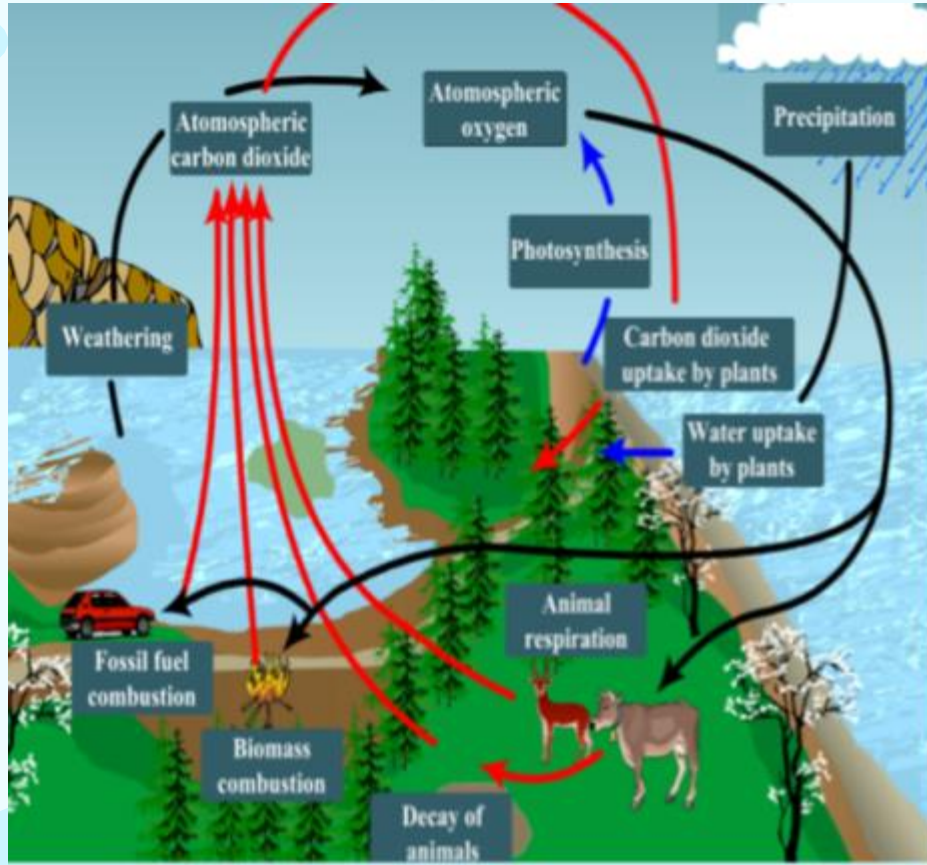
U.S. Department of the Interior
U.S. Geological Survey

Stefanie Neas, Jim Morgan, Gabriele Zanolli, Food and Agriculture Organization of the United Nations
Howard Perlman, Gerard Gonthier, U.S. Geological Survey

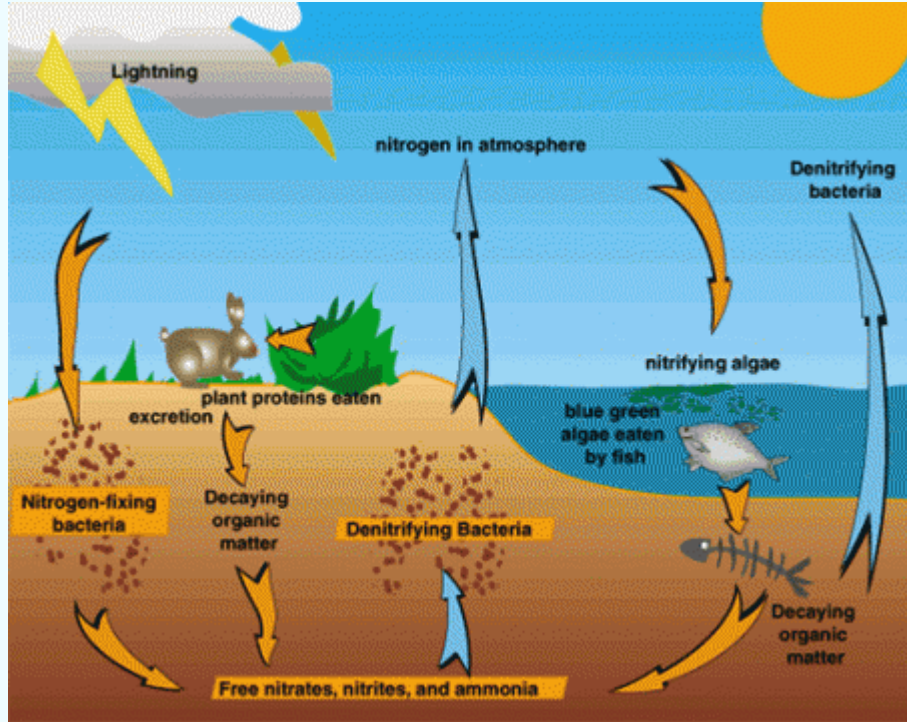
General Information Product 146
<http://ga.water.usgs.gov/edu/watercycle-kids.html>



Carbon Cycle



Oxygen Cycle



Nitrogen Cycle



Review

Water Cycle

Exchange of water molecules through nature

Nitrogen Cycle

Exchange of nitrogen atoms and molecules through nature

Carbon Cycle

Exchange of carbon atoms through nature

Oxygen Cycle

Exchange of oxygen atoms through nature

Videos

Here are some videos to help explain the different cycles in nature!

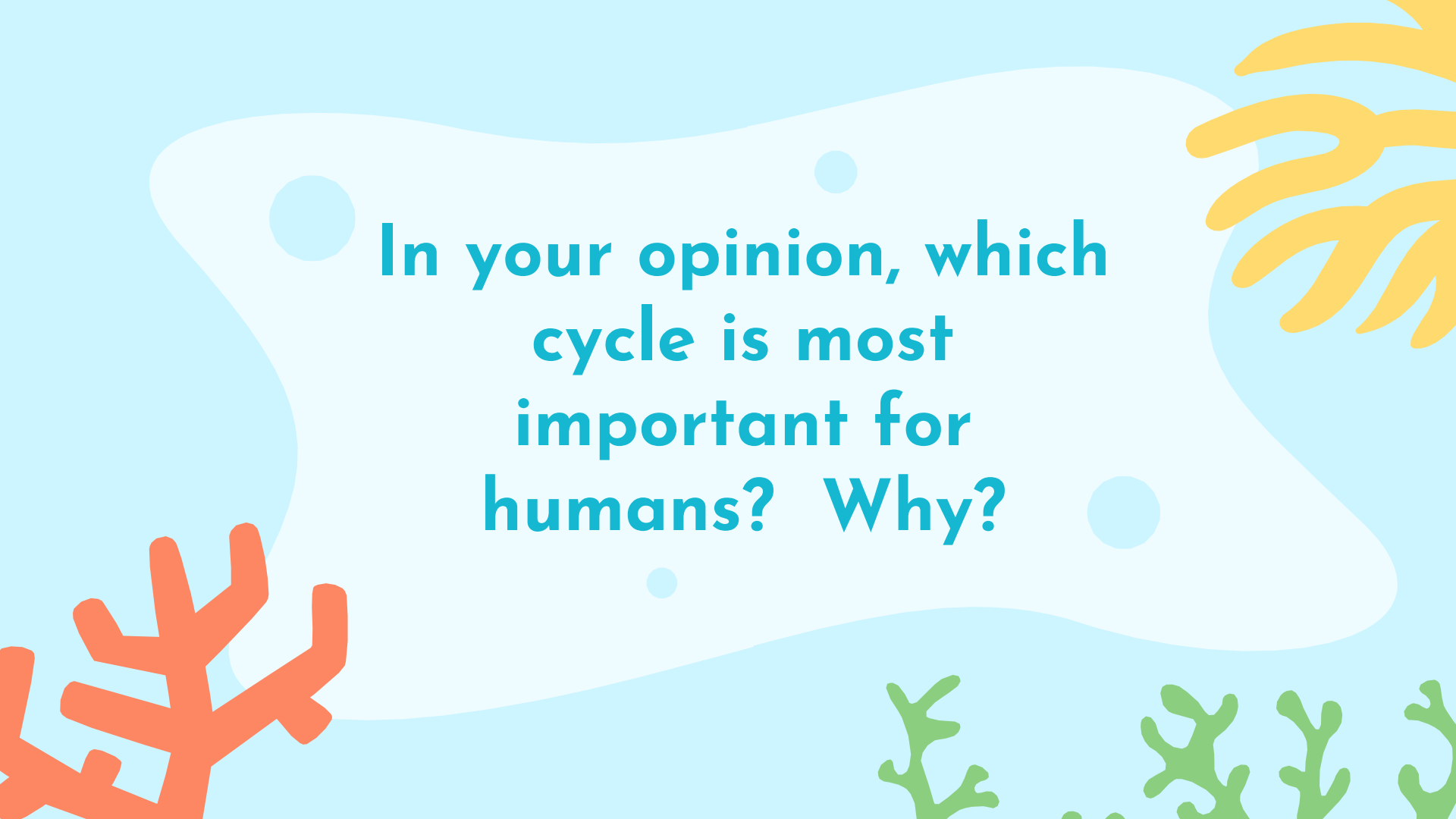
After watching the videos, log into BrainPop through Clever and check out these games for the cycles:

- <https://www.brainpop.com/games/nitrogencyclegame/>
- <https://www.brainpop.com/games/watercyclegame/>
- <https://www.brainpop.com/games/carboncyclegame/>

<https://www.youtube.com/watch?v=2D7hZplYICA>

<https://www.youtube.com/watch?v=NHqEthRCqQ4>

<https://www.youtube.com/watch?v=pGWJ9GgDNhM>



**In your opinion, which
cycle is most
important for
humans? Why?**

Done early

Done early? Check these sites about the different cycles in ecosystems!

Carbon Cycle

- <https://oceanservice.noaa.gov/facts/carbon-cycle.html>
- <https://az.pbslearningmedia.org/resource/pcep14.sci.ess.co2cycle/carbon-dioxide-carbon-cycle/>
- https://www.sciencelearn.org.nz/image_maps/3-carbon-cycle

Oxygen Cycle

- https://www.ducksters.com/science/ecosystems/oxygen_cycle.php
- <https://mocomi.com/the-oxygen-cycle/>

Nitrogen Cycle

- <https://kids.frontiersin.org/articles/10.3389/frym.2019.00041>
- <https://az.pbslearningmedia.org/resource/lsp07.sci.life.eco.nitrogen/the-nitrogen-cycle/>
- https://www.sciencelearn.org.nz/image_maps/14-the-terrestrial-nitrogen-cycle