The Water Cycle

Hampton Middle School

Water Cycle Vocabulary Copy in your notes

- **Radiation: The source of energy for evaporation is mostly solar; the water cycle is created by radiation(heat). The sun warms the earth through radiation.**
- **Conduction**: Conduction is the transfer of heat from molecule to molecule. Conduction in the water cycle takes place very close to the ground as one air molecule warms and touches another air molecule, giving off some of its heat to the other. This can be a very slow process in the atmosphere.
- **Convection**: the mass transfer of heat from one place to another. It happens as a group of heated molecules moves to another location taking the heat with them. Convection in the water cycle is when the air near the surface is heated, then rises taking heat with it.
- **Hydrosphere:** liquid water component of the Earth. It includes the oceans, seas, lakes, ponds, rivers and streams. The hydrosphere covers about 70% of the surface of the Earth and is the home for many plants and animals

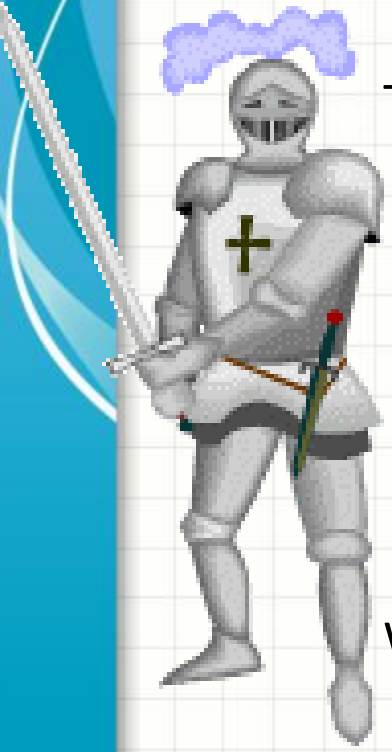
- **Condensation**: Condensation is the process by which water vapor in the air is changed into liquid water. Condensation is crucial to the water cycle because it is responsible for the formation of clouds.
- **Transpiration**: process by which moisture is carried through plants from roots to small pores on the underside of leaves, where it changes to vapor and is released to the atmosphere; essentially evaporation of water from plant leaves.
- **Gravity**: one of the driving forces in the water cycle; works mostly on groundwater
- **Oceanography**: Oceanography, also known as oceanology and marine science, is the branch of Earth science that studies the ocean
- **Precipitation**: any product of the condensation of atmospheric water vapor that falls under gravity; The main forms of precipitation include drizzle, rain, sleet, snow, and hail.

- **Evaporation**: Water is transferred from the surface to the atmosphere through evaporation, the process by which water changes from a liquid to a gas
- **Groundwater**: Groundwater is the water located beneath the earth's surface in soil pore spaces and in the fractures of rock formations ;Groundwater supplies drinking water for 51% of the total U.S. population and 99% of the rural population.
- **Water cycle**: The water cycle, also known as the hydrologic cycle or the H2O cycle, describes the continuous movement of water on, above and below the surface of the Earth
- **Atmosphere**: The atmosphere is the blanket of gases which surrounds the Earth

What is the water cycle?

The Water Cycle

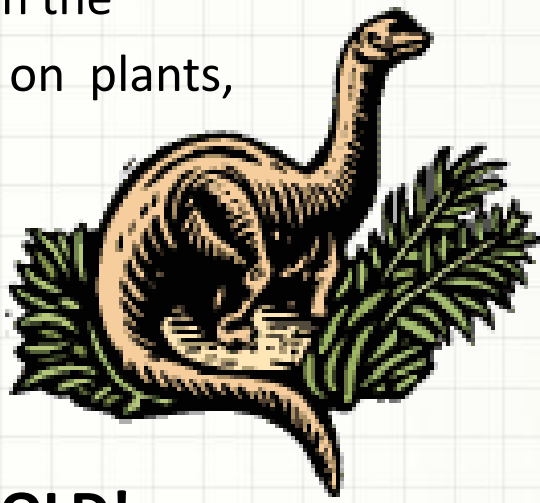
Look at a glass of water. Take a good long look at the water.
Now -- can you guess how old it is?



The water in your glass may have fallen from the sky as rain just last week, but the water itself has been around pretty much as long as the earth has!

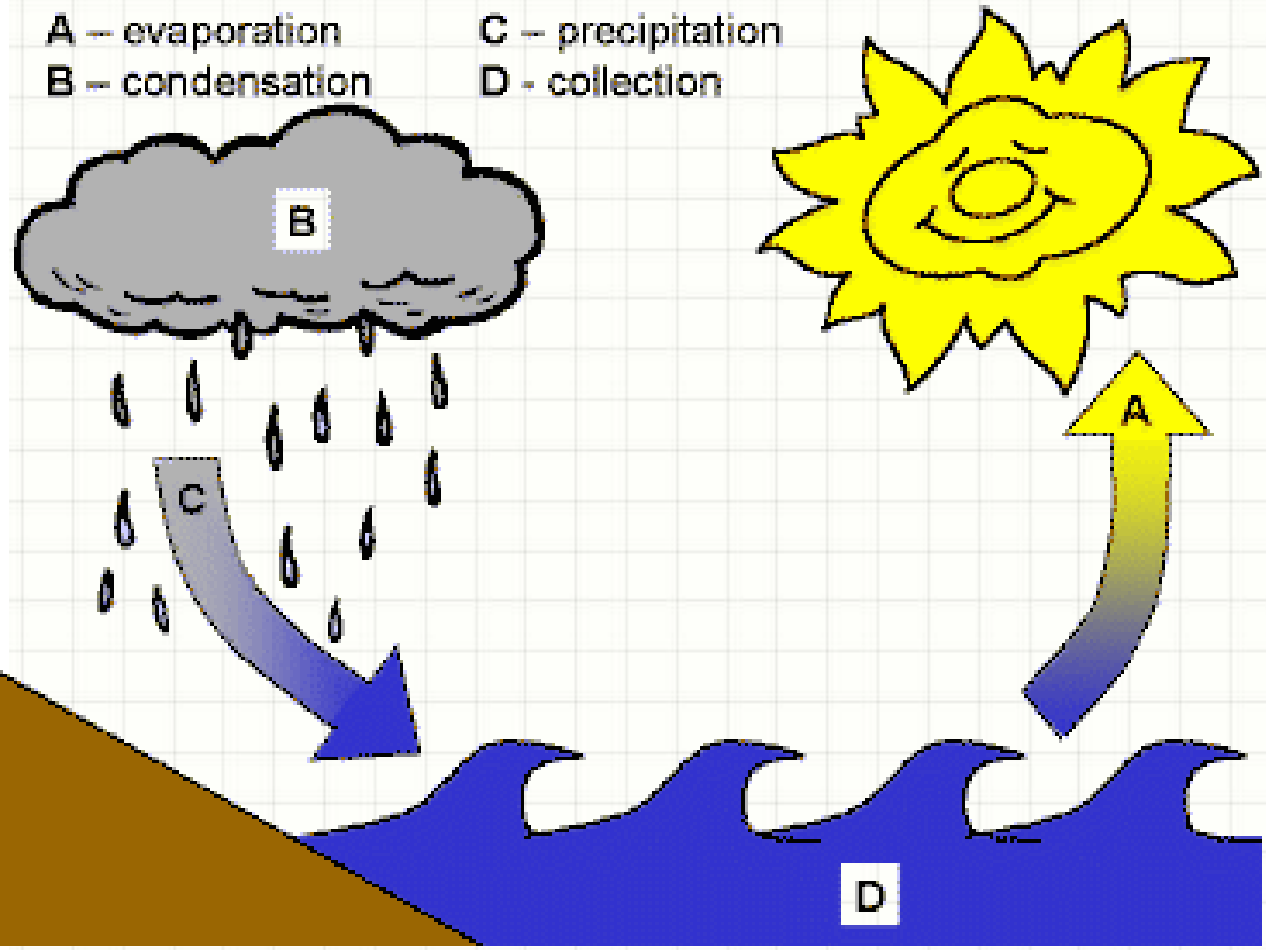
When the first fish crawled out of the ocean onto the land, your glass of water was part of that ocean. When the Brontosaurus walked through lakes feeding on plants, your glass of water was part of those lakes.

When kings and princesses, knights and squires took a drink from their wells, your glass of water was part of those wells.



And you thought your parents were OLD!

Draw a sketch of this water cycle
BE SURE TO LABEL /MAKE A KEY



The earth has a limited amount of water. That water keeps going around and around and around and around and around and (***well, you get the idea***) in what we call the "Water Cycle".

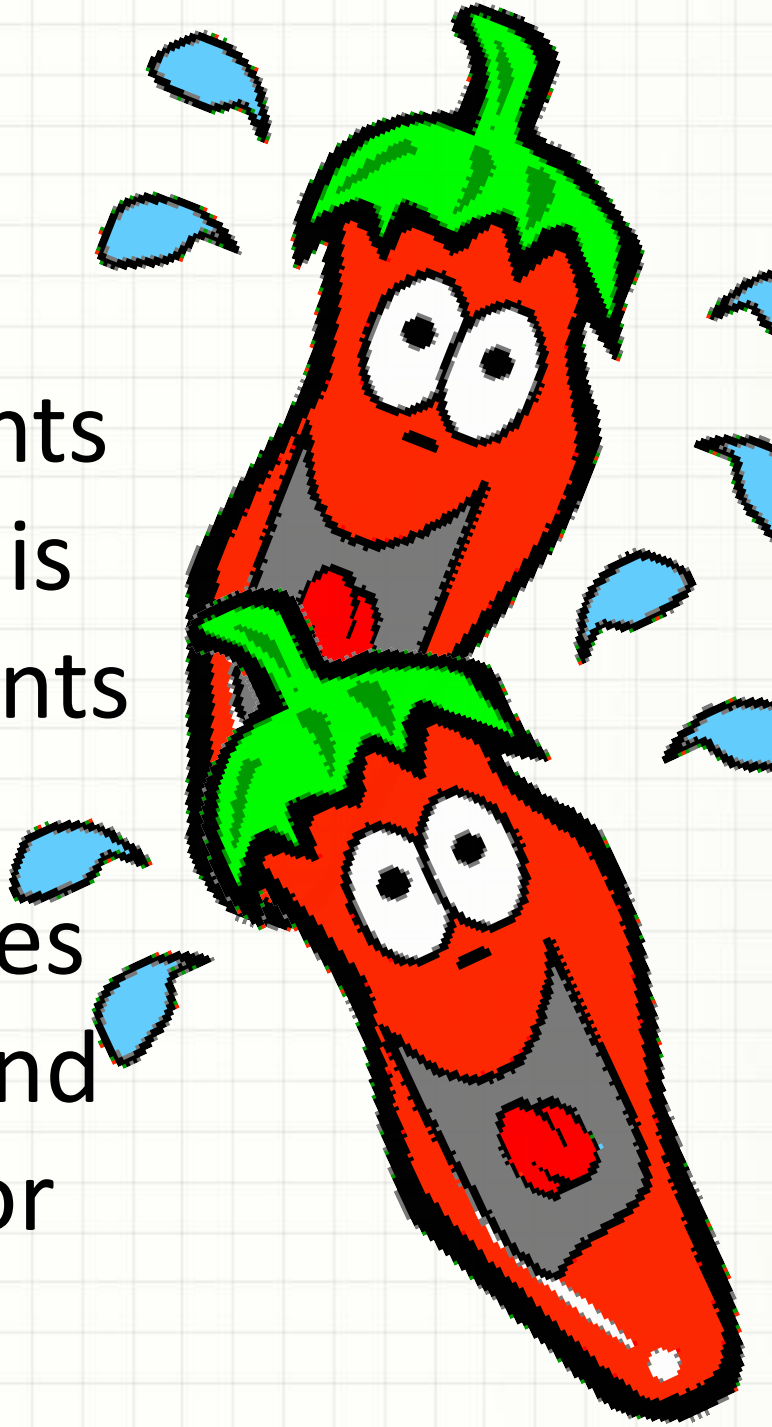
This cycle is made up of a few main parts:

- **evaporation (and transpiration)**
- **condensation**
- **precipitation**
- **collection**

Evaporation:

Evaporation is when the sun heats up water in rivers or lakes or the ocean and turns it into vapor or steam. The water vapor or steam leaves the river, lake or ocean and goes into the air.

Do plants sweat?
Well, sort of.... People perspire (sweat) and plants transpire. **Transpiration** is the process by which plants lose water out of their leaves. Transpiration gives evaporation a bit of a hand in getting the water vapor back up into the air.



Condensation:

Water vapor in the air gets cold and changes back into liquid, forming clouds. This is called condensation.

You can see the same sort of thing at home... Pour a glass of cold water on a hot day and watch what happens. Water forms on the outside of the glass. That water didn't somehow leak through the glass! It actually came from the air. Water vapor in the warm air, turns back into liquid when it touches the cold glass.

PRECIPITATION:

Precipitation occurs when so much water has condensed that the air cannot hold it anymore. The clouds get heavy and water falls back to the earth in the form of rain, hail, sleet or snow.

Collection:

When water falls back to earth as precipitation, it may fall back in the oceans, lakes or rivers or it may end up on land. When it ends up on land, it will either soak into the earth and become part of the "ground water" that plants and animals use to drink or it may run over the soil and collect in the oceans, lakes or rivers where the cycle starts

all over again.


USGS
science for a changing world
FAO
ICE CLOUDS
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 it has always been here and is a part of The Water Cycle.
SUBLIMATION
CLOUDS
SUN
ATMOSPHERE
CONDENSATION
ICE AND SNOW
PRECIPITATION
The Water Cycle
VOLCANIC STEAM
EVAPOTRANSPIRATION
EVAPORATION
SNOWMELT
RUNOFF
RIVERS
FOG AND DEW
RUNOFF
ANIMALS
STREAMFLOW
SEEPAGE
EVAPOTRANSPIRATION
OCEANS
SPRING
RUNOFF
LAKES
INFILTRATION
SEEPAGE
PLANT UPTAKE
RECHARGE
GROUNDWATER FLOW
VENTS
GROUNDWATER STORAGE
U.S. Department of the Interior
U.S. Geological Survey
Stefanie Nono, 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