

Where

Does the Water Go?



Earth's water is always in movement, and the water cycle describes the continuous movement of water on, above, and below the surface of the Earth. Since the water cycle is truly a "cycle," there is no beginning or end. Water can change states among liquid, vapor, and ice at various places in the water cycle, with these processes happening in the blink of an eye and over millions of years.



When it rains, the water will "run off" and end up in streams, rivers, ponds, the watershed or a rain barrel. Then the water goes through the process of **evaporation**, when the sun heats the water molecules, turning them into water vapor and returning the water back into the sky. Once the water reaches the cold, the molecules slow down and attach themselves to dust particles. As they do this they begin to clump together and form clouds, known as **condensation**. When the weight of the dust and water is too great for the air to hold up any longer, then it rains, sending the water back down to the ground, this is called **precipitation**. Precipitation also percolates or moves downward through openings in the soil to replenish aquifers under the ground.



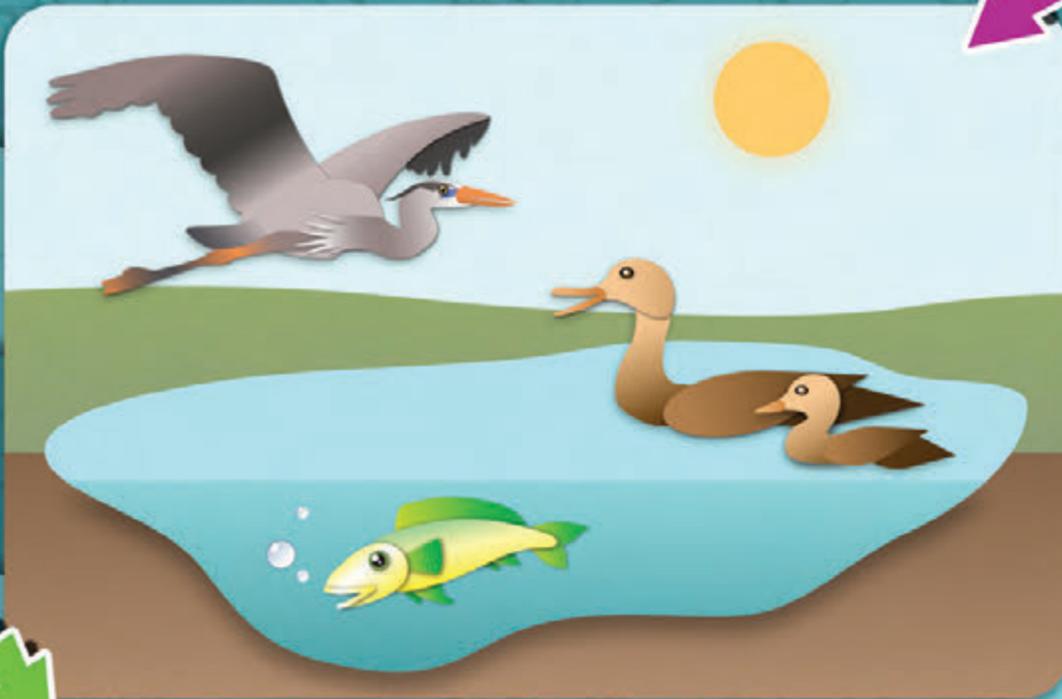
Although the balance of water on Earth remains fairly constant over time, individual water molecules can come and go in a hurry. The water in the apple you ate yesterday may have fallen as rain half-way around the world last year or could have been used 100 million years ago by a dinosaur to drink or swim in. Water in the water cycle also can come from people, plants and animals through a process called **transpiration**.

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Our Ecosystem

An **ecosystem** is a community of plants, animals and smaller organisms that live, feed, reproduce and interact in the same area or environment. Some ecosystems are very large. For example, many bird species nest in one place and feed in a completely different area. On the other hand, some ecosystems may be physically small, such as you would find in a meadow at the edge of a forest or in a coral reef in the ocean.



If one thing changes, it will affect all of them. If we cut down trees to make way for homes or new roads, or a hurricane destroys the land, the lives of all living things is altered. Pollution can get into our river and streams and affect the quality of the water we drink, and kill fish and other organisms that live in the water. Keeping our environment clean benefits all living creatures.

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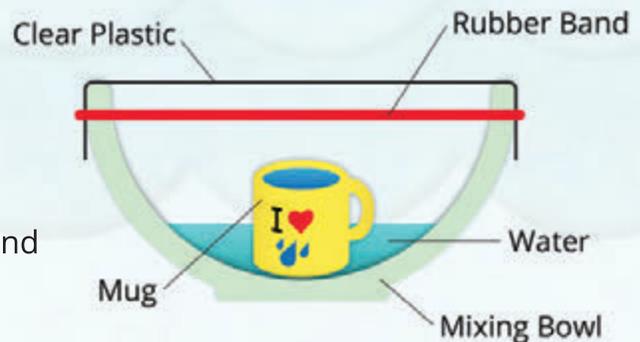
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Activity: Make your own water cycle

The sun's heat makes water evaporate from streams, lakes, rivers, and oceans. The water vapor rises. When it reaches cooler air, it condenses to form clouds. When the clouds are full of water, or saturated, they release some of the water as rain.

Items you will need:

- a large metal or plastic bowl
- a pitcher or bucket
- a sheet of clear plastic wrap
- a dry ceramic mug (like a coffee mug)
- a long piece of string or large rubber band
- water



Directions

1. Put the bowl in a sunny place outside.
2. Using the pitcher or bucket, pour water into the bowl until it is about 1/3 full.
3. Place the mug in the center of the bowl. Be careful not to splash any water into it.
4. Cover the top of the bowl tightly with the plastic wrap.
5. Tie the string around the bowl to hold the plastic wrap in place.
6. Watch the bowl to see what happens.

The "mist" that forms on the plastic wrap will change into larger drops of water that will begin to drip. (You can speed up the dripping by carefully moving the bowl – don't splash! – into the shade.) When this happens, continue watching for a few minutes, then carefully peel back the plastic. Is the coffee mug still empty? Water from the "ocean" of water in the bowl **evaporated**. It condensed to form misty "clouds" on the plastic wrap. When the clouds became saturated it "rained" into the mug!

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Puzzle

Unscramble these words to create the phrase below.

TOYSESMEC

Grid of 13 empty boxes for unscrambling TOYSESMEC.

13

12

14

3

TOPNITCAIPIRE

Grid of 14 empty boxes for unscrambling TOPNITCAIPIRE.

4

REVIR

Grid of 5 empty boxes for unscrambling REVIR.

9

IODONNATCESN

Grid of 11 empty boxes for unscrambling IODONNATCESN.

11

7

PATVENROAOI

Grid of 11 empty boxes for unscrambling PATVENROAOI.

8

NRAI

Grid of 4 empty boxes for unscrambling NRAI.

2

SEMTAR

Grid of 6 empty boxes for unscrambling SEMTAR.

1

TAWRE

Grid of 5 empty boxes for unscrambling TAWRE.

6

5

FUFRON

Grid of 6 empty boxes for unscrambling FUFRON.

10

Grid of 5 empty boxes for the first part of the answer.

1

2

3

4

5

Grid of 6 empty boxes for the second part of the answer.

6

7

8

9

10

Grid of 5 empty boxes for the third part of the answer, with the letter 'L' in the 13th position.

11

12

13

L

14

Answer
(backwards)



Puzzle solution:
TAMPA WATER CYCLE

RAIN
STREAM
WATER
RUNOFF

From top to bottom:
ECOSYSTEM
PRECIPITATION
RIVER
CONDENSATION
EVAPORATION



Water
Department