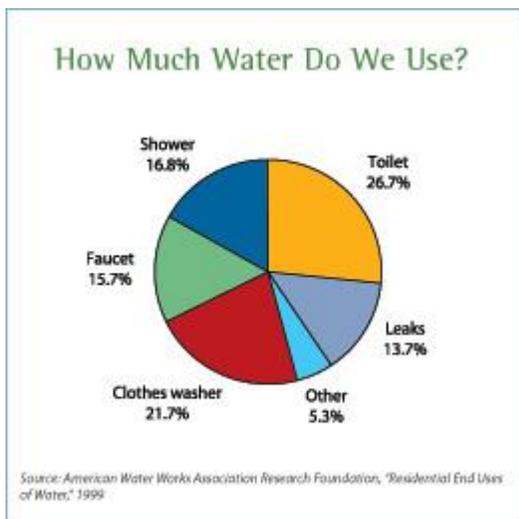


WATER FOR LIFE STEM TO-GO

DRIVING QUESTION: WHERE DOES WATER GO?

We all need water. In our homes, we use water to drink, to cook, to bathe, to flush toilets, to do laundry, and to wash dishes. The average person uses 100 gallons of water a day. Most families use the most water to flush their toilets.



Bath	A "full tub" varies, of course, but 36 gallons is the average
Shower	Old showers use up to 5 gallons of water per minute. Water-saving shower heads produce about 2 gallons per minute.
Teeth brushing	<1 gallon
Hands/face washing	1 gallon
Face/leg shaving	1 gallon
Dishwasher	6-16 gallons
Dishwashing by hand	About 8-27 gallons
Clothes washer	25 gallons/load of clothes
Toilet flush	3 gallons
Glasses of water you drank	8 oz. per glass (not counting water for pets)

How much water do you use? You can use this table above or go to this interactive website to calculate the average amount of water you use in a day. <https://water.usgs.gov/edu/activity-percapita.html>

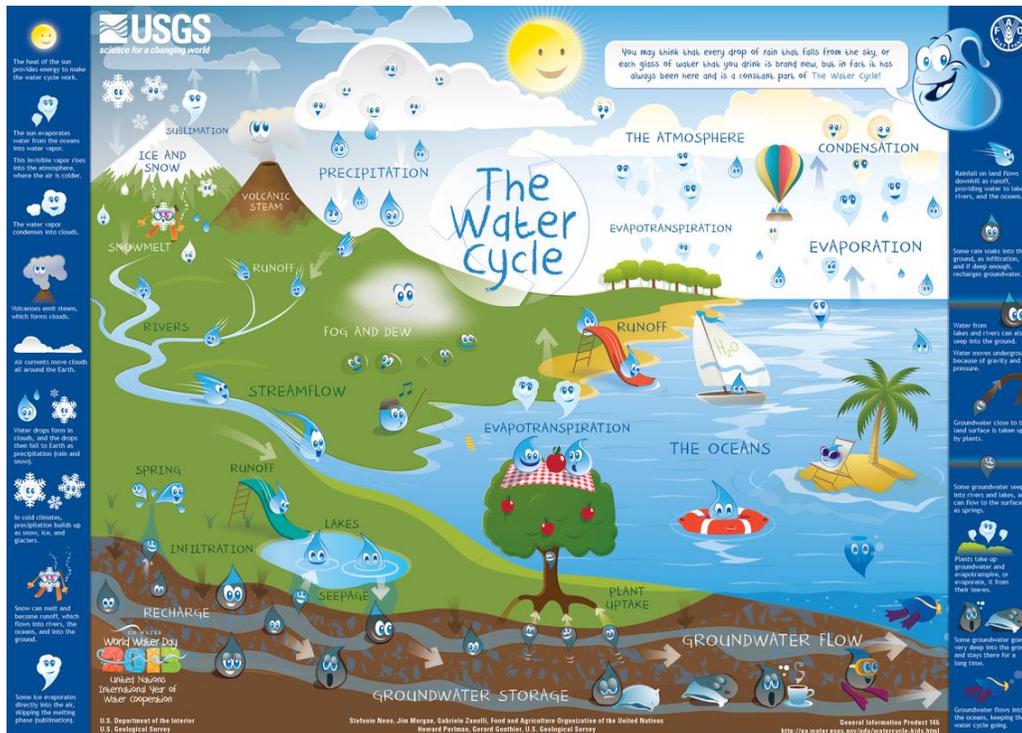
Leak Detectives



Every drop counts! Did you notice that 13.7% of our water is lost to leaks? **Conservation** means using a resource wisely. The easiest way to **save water** is to look for leaks and repair them. Do any of the faucets drip in your home? Calculate how much water is lost. <https://water.usgs.gov/edu/activity-drip.html> Sometimes, homes have a hidden leak – the toilet! Here's an easy way to check to see if your toilet is leaking. For this experiment, you will need three to five drops of food coloring.

- Flush your toilet and let it fill back up. When it stops running, remove the lid off the storage chamber (top) of the toilet. Put several drops of food coloring into the chamber. Wait a few minutes.
- Then, open the toilet lid and see if there is any food coloring in the toilet bowl. Is there food coloring inside the toilet bowl?
 - No. If there is no food coloring inside the toilet bowl, that's great! Your toilet is probably not leaking.
 - Yes. If there is food coloring in the toilet bowl, then the "flapper" or seal on the toilet may be leaking. A leak means you lose water and money (literally) down the drain. Fixing a flapper is pretty easy. Here are directions. <https://www.homedepot.com/c/ah/how-to-fix-a-leaky-toilet-flapper/9ba683603be9fa5395fab90cfc478fc>.
- Flush your toilet several times to make sure the food coloring goes out of your toilet without leaving a stain.

You may think that when it rains, that we are getting new water, but rain is a part of the Earth's Water Cycle. The water cycle, or hydrologic cycle, means that the same water moves around. One water drop has many adventures. The rain that is falling on you might have fallen on a dinosaur 70 million years ago!



Water Cycle Walk: How many steps of the water cycle can you find?

- Can you see the **sun**? If so, you have found the energy source that makes the water cycle work.
- On a hot, sunny day, if it feels humid, or sticky in the air, or you are sweating, then you found **evaporation**. Most of the time, humans don't notice the water vapor in the air around us.
- If you see clouds, then you found **condensation**. Condensation is when water vapor in the air turns into liquid in clouds.
- If it is raining, snowy, or foggy, then you found **precipitation**, which is how water returns from the air to the earth.
- Do you see any trees or plants? Then, you found **transpiration**, where plants give off water vapor through their leaves.
- Check the edges of roads or sidewalks. If you can see erosion where soil is washed away, then you have found **runoff**.
- A creek, stream or river is another form of **runoff**, but it is just a tiny part of the world's water.
- Do you see any puddles? The puddles can either dry up through **evaporation** from the sun, or the water can **infiltrate** into the soil.
- Do you see any **lakes, ponds, or swamps**? Most of the fresh water on the surface of the earth is **stored** in lakes, ponds, and wetlands like swamps, marshes, and bogs.
- Have you ever seen the **ocean**? Most of the water on earth is in the oceans, but the water is saline, or too salty for us to drink.
- Most of the earth's fresh water is **stored in ice caps** (in Antarctica and Greenland) and glaciers. Many of us will never see ice caps or glaciers, but if you like penguins, like I do, you can still check this box. 
- If your family uses a **well** to get your water, then you are using an **aquifer**, which is a type of a rock that stores groundwater inside it.

This lesson was adapted from: Project WET: Every Drop Counts and web resources: <https://19january2017snapshot.epa.gov/www3/watersense/pubs/indoor.html>
<https://www.epa.gov/sites/production/files/2017-02/documents/ws-ourwater-falw-family-fact-sheet.pdf>
<https://www.usgs.gov/special-topic/water-science-school> <https://www.dailymail.co.uk/sciencetech/article-3101363/Have-drank-dinosaur-urine-glass-water-contains-100-Jurassic-pee-claim-scientists.html>