

Wonders and Words

Questions and Answers

Q: Do water towers freeze in the winter?

A: In places like Montana and North Dakota where temperatures dip far below freezing for many weeks in a row, the water in the water towers does freeze. Engineers must install heating systems in the towers to prevent them from filling with ice. Heat is introduced in the bottom, and since heat rises, warm water rises to the top of the tower. Water at the very top of the tank might freeze, but there is always liquid water in the tank.

Q: In a bathroom, why does the faucet's water temperature sometimes change when the toilet is flushed?

A: When you flush a toilet, the tank behind the bowl empties and pushes the waste down pipes into the sewer system. New water then rushes in to refill the toilet tank and the bowl. The flush causes water to rush out of the cold water pipe so quickly that it results in a drop in water pressure and flow for the whole home's hot and cold water supply. Depending on the structure of the plumbing, either hot water or cold water then may dominate in some of the home's plumbing lines until the water pressure equalizes.

Q: What happens in parts of the country where the drinking water has more minerals than in other parts of the country?

A: Hard water is water that is high in dissolved minerals, such as calcium and magnesium, which have been picked up as water seeps through the earth. Some communities have more of these minerals than others do because of their location and the work done (or not done) by their treatment plants. Hard water will not hurt living things, but it can make soap less sudsy, hair feel limp, and add a grimy buildup on faucets and sinks. Filters, chemicals, and water softeners can be used to get rid of these problems.

Q: How long can the same drinking water be used?

A: All the water on Earth has been around for billions of years. The same water that comes down to the ground as rain and is used by plants and animals, soaked into the ground, or gathered in lakes, rivers, and oceans is forever recycled back into the atmosphere where it can again fall to Earth. The water is the same water that our ancestors used and that the dinosaurs drank.



Glossary

Aqueducts: Channels or passageways designed to transport water from a remote source, usually by gravity.

Aquifer: An underground layer of porous earth or stone that stores water.

Chlorine: Chemical added to water at the treatment facility in order to kill bacteria and viruses.

Coagulation: Soft particles of dirt sticking together to make a more solid mass.

Condensation: Water in a gas form cooling off and coming together to form liquid water.

Evaporation: The process in which water heats up to become water vapor.

Filtration: The process of sifting particles out of a liquid.

Floc: A mass formed in water by suspended particles.

Gravity: Natural force pulling all things toward the center of the earth.

Groundwater: Water that seeps through the earth's surface through cracks and spaces between rocks to form bodies of water underground.

Hot water heater: Tank in which water is heated and stored until a hot water handle is turned.

Insulated: Keeps in heat or cold.

Precipitation: Water, snow, sleet, or hail that forms in a cloud and falls to Earth.

Reservoir: Artificially created or natural lake used for collecting and holding water before it is treated for drinking water.

Sedimentation: The sinking of heavy particles.

Service line: Pipe that runs from the water main pipe to a home.

Storage tank: Large tank in which water is stored after being cleaned.

Surface water: Water on the surface of the earth, such as lakes, ponds, rivers, and oceans.

Transpiration: The process of water vapor passing to the atmosphere through the leaves in plants.

Washer: Flat disk made of metal, plastic, rubber, or leather, that is commonly placed beneath a screw's nut to relieve friction, prevent leakage, or distribute pressure.

Water main: Pipe that runs from a large feeder pipe that is connected to the storage tank to a service line.

Watershed: Area where rain and surface water drain into a specific river, lake, or spring.

Water vapor: Water in the gas state.