Water, Water Everywhere, But Not a Drop to Spare

The summer is coming and with it, some extreme temperatures and possible droughts. We all tend to use more water during these months for many reasons but it is important to remember that we have to do our parts to conserve it.

PRACTICAL SCIENCE WITH PHIL FREDA

If you have ever seen the Earth from space, there is one thing that you will immediately notice—most of the Earth's surface is covered with water.
Actually, more than 70 percent of the Earth is covered with water.

I know what you're thinking: “Why is this guy telling me to save water?”

Here's why:

According to the University of Michigan, 97.5 percent of all water found on Earth is actually salt water found in Earth's oceans and seas.
Only 2.5 percent is fresh water.

70 percent of that fresh water is frozen in icecaps. More than 29 percent is trapped in the soil and underground aquifers too deep for us to reach.

That leaves less than 1 percent of all fresh water, or approximately 0.007 percent of all Earth's water, available for nearly 7 billion of us humans to use.

It is extremely important for us to use water sparingly throughout the year but during the summer, there are more opportunities to use more water than is required.

This coupled with high temperatures and possible droughts make summer a time to watch our water use.

Some examples where we tend to use too much water in the summer are:

- Washing vehicles
- Washing and grooming pets
- Landscaping
- Gardening and watering plants
- Pools and summer recreation
- Cleaning your home's exterior, sidewalks and driveways

Where does the water go?

An important thing to remember is that water evaporates and the rate of evaporation is mostly altered by temperature.

As a general rule, the hotter the temperature is, the quicker water will evaporate into the atmosphere where it is redistributed.

Doesn't the water just come back as rain?

Yes, of course it does, but there's a catch.

A water molecule released in evaporation may end up across the globe or in the ocean, where it cannot be retrieved. This is all part of the water cycle.
The water that we receive as rain is evenly distributed around the area in soil, lakes and rivers, not entirely in the reservoirs of our local water companies.

It takes time and money for the water to eventually get back into our reserves.

When we use excess water, we actually make it harder to make up our losses.

Couple this with chances of drought and low precipitation, and we may be in for some trouble.

What can we do to help?

There are many opportunities for us to help save water.

According to Aqua, there are three important parts to being water smart: Inside your home, outside your home and detecting leaks.
Inside your home

- Only run full loads in both dishwashers and clothes washing machines. If this isn't possible, adjust water level or cycle.
- When shopping for plumbing parts and appliances, look for high-efficiency models and fixtures. This can save you about 30 percent of indoor water usage.
- Choose appliances with different cycles to match cleaning needs.
- Keep a pitcher of cold tap water in the refrigerator. This can save you money from buying water and from running the tap.
- Install low flow faucet aerators and shower heads, and limit time in the shower.
- Turn off water when brushing teeth and shaving.

Outside your home

- Water the lawn only when it needs it. If you walk through the lawn and notice footprints, it is time to water.
- Only water plants in the early morning. During the midday hours, the temperature spikes. Remember, the higher the temperature, the higher the rate of evaporation.
- Deep soak your lawn instead of using small sprinklings of water, which will evaporate quickly.
- Set the lawnmower one notch higher. Taller grass retains moisture better.
- Check sprinkler heads and valves for leaks and adjust timers accordingly.
- Plant for your climate. Native and drought-tolerant plants will have lower water needs.
- Use mulch around plants to save moisture.
- Always use an automatic shut-off nozzle when using a hose for gardening or cleaning.
- Use a broom, instead of a hose, to clean sidewalks and driveways.
- Use soap and water from a bucket when cleaning your car.
- Disconnect hoses and shut off outdoor water to prevent leaks during colder weather.
- Cover your swimming pool when not in use. This will cut evaporation by 90 percent.

Detecting leaks

- Turn off all water in and outside the house. If the leak indicator on your water meter is spinning, there is a leak.
- Toilets are a main culprit in water leaks. Did you jiggle the handle to stop a noise, or do you hear strange noises from the toilet? If so, you most likely have a leak.
- If the toilet is okay, check the faucet. If the faucet drips after shutting it off, it may be time to replace the washer inside.
- If both toilets and faucets are okay, make sure to check outside the house for water fixtures and sprinkler systems.

Aqua also has a table available on their website showing how much water is used during certain activities using conventional plumbing equipment.
Here is a synopsis of their data:

- **Flushing toilet**: 5 to 7 gallons per flush
- **Shower**: 7 to 10 gallons per minute

- **Bath:** 36 to 50 gallons
- **Laundry:** 60 gallons
- **Shaving:** 20 gallons with tap on for the duration
- **Brushing teeth:** 10 gallons with tap on for the duration.

As you can see, water can be wasted if we are not cautious.

Saving water is everyone's responsibility.

Think about it.

Here is a nifty PDF courtesy of the Massachusetts Water Resources Authority with tips on water conservation.