



Lesson 2: Water Budget

Objective: *To create awareness of water usage by having students track their water habits and calculate how much water they use each day.*

Background Information

Earth has a great deal of water covering its surfaces, but 97% of this is saltwater. Saltwater is great for marine animals and plants that are adapted to living in an environment with salt, but is not a great source for drinking water used by people and other freshwater animals. Three percent of the water on our planet is freshwater, with only 1% being accessible. The other 2% is trapped in the form of polar ice caps. We must share this 1% of usable water with every person, animal, and plant that also lives on earth.

How you can help As you can see, it is very important that we conserve the amount of water we have. Here are a few ways that you can do your part and save our freshwater supply from depletion:

- Check your toilet for leaks. Put a few drops of food coloring in your toilet tank. If the coloring begins to appear in the toilet bowl without flushing, then you have a wasteful leak that should be repaired at once. Even a small leak can waste large amounts of water.
- Put a plastic container or displacement bag in your toilet tank. Put 1 to 2 inches of sand or pebbles in the bottom of a quart or larger container and fill the rest of the container with water. Put the cap on and place the bottle in your toilet tank; position it safely away from the operating mechanism. The container will save on each flush without impairing the efficiency of the toilet.
- Consider buying an ultra-low-flush toilet which uses only 1.6 instead of 3.5 to 5 gallons per flush. Take shorter showers. You will save up to 5-10 gallons for every minute that you reduce your shower time.
- Turn off the water while brushing your teeth and shaving.
- Check faucets and pipes for leaks. Even a small drip wastes more than 1,500 gallons a month.
- Use your automatic dishwasher. Use this dishwasher for full loads only. Every load uses on average 9-12 gallons, while hand washing dishes uses 20 gallons.
- Use your automatic washing machine for full loads only.
- Don't let the faucet run while you clean vegetables. Instead rinse them in a sink full of clean water.
- Keep a bottle of drinking water in the refrigerator, so you won't have to run the tap to cool it.
- If you wash dishes by hand, then don't leave the water running while you rinse.
- Form your gardens by planting California native plants that require less water.
- Water early in the morning or late in the evening, so that less water will evaporate in the heat.
- Do not allow the hose to run as you wash your car. Use a self-closing hose nozzle, or turn off the water between rinses.
- Install a water saving shower head. You can save 20 or more gallons when you take a 5 minute shower.

Testing Directions

- Lead students in a discussion about water conservation and have them investigate how much water they use. Distribute "My Water Budget" take home worksheets to students and have them monitor the amount of water they use over a 24 hour period of time.

Conclusion

- Ask students what they can do to conserve water in a more efficient manner at home. Review the many different ways that each person can help save our supply of freshwater.

"It All Flows to Me"

My Water Budget

Testing Directions

1. Track your household water usage for a 24 hour period. Count how many times you do each of the activities below.
2. After you have collected all of your data, then calculate how many gallons of water you used for each activity.
3. Add the gallons used in each activity to figure out the grand total of water used at the bottom of the page.

My Household Water Usage:

# of times you flush a toilet	<u> </u> flushes	X	4.0 Gallons per flush	=	<u> </u> Gallons
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# of minutes you use a faucet	<u> </u> minutes	X	1.3 Gallons per minute	=	<u> </u> Gallons
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# of times you take a bath	<u> </u> baths	X	24 Gallons per bath	=	<u> </u> Gallons
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# of minutes you take a shower	<u> </u> minutes	X	7.5 Gallons per minute	=	<u> </u> Gallons
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# of times you use a dishwasher	<u> </u> washes	X	9.3 Gallons per wash	=	<u> </u> Gallons
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# of times you use a washing machine	<u> </u> washes	X	41 Gallons per wash	=	<u> </u> Gallons
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# of times you consume an 8 oz glass of water	<u> </u> glasses	X	0.04 Gallons per glass	=	<u> </u> Gallons
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Total gallons used in a 24 hour day = Gallons

Note: This activity does not record every way people can use water. Can you think of additional ways that you use water?