

Title
Why Drink Water?

Materials to bring

- **Water, 2 containers**
- **Waxed cups, two patterns / colors**
- **Flip chart and prepared charts**
- **Handouts with water standards on one side and “What should I do with this information?” on the other side**
- **Tally sheets for taste test / students write on own paper.**
- **Lowell logo sport bottles**

Ask teacher to be filling waxed cups with water from blinded water containers during lesson

Safe drinking water hotline: 800-426-4791

Title Why Drink Water?

STANDARDS FOR PUBLIC AND BOTTLED WATER

LEAD, ETC

EPA / IBWA

MPR asks question, Why is it a good idea to drink water?	Flip chart	Write student answers on flip chart	5 minutes
But what other ideas do you have about water?	Flip chart	Write student answers on flip chart	
Some of you are worried about drinking water safety. Know source of drinking water 5 gal = \$0.01	Flip chart	Refer to information about various important items and why they are important. Info is pre-written in colorful markers. It would be ideal to bring a picture of Hetch Hetchy (pass around photos) and description of the water system. Lead (compare to paint risk) Bacteria Fluoride Refer to units of measurement EPA / IBWA International differences	5-10 minutes

HEALTH

Health issues if don't drink water. "Can anyone say what can happen if you don't drink water?"	Flip chart	Write student answers on flip chart Dehydration Obesity Constipation Fatigue	10 minutes
Show hands "...if it is safe to drink the water. "...if bottled water is safer than tap.	Flip chart	Write student vote answers.	
Why buy bottled water versus tap?		Marketing	
Why filter water?		Taste	
Is it better to drink water or Gatorade after exercise?			
Minimize drinking sweetened drinks. Coke Diet coke Gatorade Gatorade v. Coke			

PET / REUSE / WASHABLE SPORTS BOTTLE

The environment is also an issue here	Flip chart	Pre-written PET bottle information	5 minutes
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TASTE TEST WATER

10 minutes

1. Help students prevent dehydration:

Presentation of the student:

Students often present to the Wellness Center feeling ill, complaining of headaches, stomachaches, feeling dizzy, fatigued, irritable and/or generally weak. These are all possible symptoms of dehydration. Students are often constipated, commonly correlated to dehydration.

Message:

Consuming adequate fluids is an important strategy to maintain health and prevent symptoms that are debilitating. It is recommended that youth and adults aim to drink 8 cups of fluids per day. (Some foods contain large amounts of water, and can count towards the amount of water needed.) It is particularly important to consciously aim to drink an adequate number of cups of fluids when ill, as the sense of thirst may disappear when a person is ill, leading to additional health problems.

This is a 'teachable moment'. The student may make a personal discovery that drinking fluids is restorative, and may pay more attention in the future.

Action:

Offer 1-2 glasses of water and pleasantly insist that the student drinks it.

2. Encourage students to drink water and to avoid drinking only fluids that contain sweeteners and the associated calories.

Provocative questions:

Ask the student, "What do you like to drink? What do you often drink? Do you drink water from the tap or do you buy water? What do you drink when you are exercising heavily?"

Message:

Persons of all ages need to drink fluids. If a person only drinks sweetened fluids (sodas, juices and sports drinks) he is taking in additional calories that will lead to unintentional weight gain, and the sweeteners alter the sense of hunger. This altered sense of hunger may lead to poor meal eating habits. Learn to like to drink plain water, or water with lemon added for flavor, or carbonated for variety. If a person ceases drinking a daily Coca Cola, he can lose 5 pounds over a short period of time.

Gatorade and other sports drinks are not necessary with increased exercise. Gatorade is a sweetened drink. Increase fluid consumption when exercising heavily.

Drinking water from the tap in San Francisco or bottled water is a choice of convenience. SF drinking water is of excellent quality and taste. The Environmental Protection Agency, through the Safe Drinking Water Act regulates drinking water quality.

Key concepts:

Drink enough water

When drinking water, avoid creating trash.

Redeem or recycle PET bottles.

Restrict sweetened drinks.

Water is an essential nutrient-necessary for maintaining body temperature, transporting nutrients throughout the body, keeping joints moist, digesting food, ridding the body of waste products, and cooling the body.

The American Medical Association recommends that adults should consume about 8 cups/day; children, about half that amount.

Approximately 85% of Americans (230 million people) consume water from public supplies or systems. These systems are regulated by the U.S. Environmental Protection Agency (EPA) and most State Health or environmental departments under a body of law known as the Safe Drinking Water Act (SDWA). By virtue of being regulated, public systems must ensure that their water meets health standards as defined by the government. That is, the water must be 'safe' for people to consume.

Myth: If lead is in your water, it's the treatment plant's fault.

Reality: The most common source of lead in drinking water is plumbing in the home.

Your plumbing may have lead pipes or lead solder in the connections. Lead is a contaminant that is particularly harmful to pregnant women and young children. If you are concerned about lead in your water, contact your local health authorities or water utility to find out how you can have your water tested by a certified laboratory. If tests reveal that the lead content of your water is above 15 parts per billion, you should reduce your exposure to it. Until a ban was introduced on lead plumbing materials in 1986, pipes and solder containing lead were often used in water systems and homes. Hints: Since warm water absorbs more lead than cold, always use cold water when you cook. 2. Because water standing in pipes tends to absorb lead, clear the pipes before drinking by letting your tap run until the water is cold.

Myth:

Bottled water is safer than tap water

Reality:

Not necessarily. Unlike tap water, the quality of finished bottled water is not government-monitored. Studies have shown that microbes may grow in the bottles while on grocer's shelves. You don't need to buy bottled water for safety reasons if your tap water meets all federal, state, or provincial drinking water standards. If you want water with a different taste, you can buy bottled water, but it costs up to 1,000 times more than tap water. Of course, in emergencies, bottled water can be a vital source of drinking water for people without water.

The Food and Drug Administration regulates bottled water as a packaged food product.

By law, the FDA's standard of quality for bottled water must be as stringent as the EPA's standards for public drinking water.

How is bottled water different from drinking water?

Bottled water is produced and distributed as a packaged food product and made specifically for drinking. Bottled water is regulated by the U.S. Food and Drug Administration (FDA). It is a commercial product. Drinking water is regulated by the EPA as a utility.

The 'Bottle Bill' passed in 1986 and again in 2000 in California requires reimbursement of returns of PET bottles and aluminum cans for cash.

PET beverage bottle has been very profitable for Coke and Pepsi, who own the bottled water brands Dasani and Aquafina, respectively. Non-carbonated bottled water is the fastest growing segment of the U.S. beverage market.

PET / REUSE / RECYCLE

California Bottle Bill was first passed in 1986 offering reimbursement for returns of beer, soda pop and sparkling drinks in glass, aluminum and clear plastic containers. By 2000 there were 13.1 billion containers in circulation.

The 2000 law put a new redemption value on fruit drink, tea, coffee, and water containers. There were 3.4 billion of those containers, bringing the number in the program to 16.5 billion. Still left out of the payment program are whiskey and wine bottles and plastic milk jugs, yet they are also recycled. Deposit laws place deposits ranging from 2.5 cents to 10 cents on beverage cans and bottles. Have achieved over 70% recycling in 10 states.

Consumers pay a CRV (California Refund Value) when they buy beverages from a retailer. The deposits are refunded to consumers when empty containers are redeemed.

In 2000, 10 billion containers were recycled, up from 9.7 billion in 1999, leaving 6.5 billion going to landfills.

For every ton of plastic bottles recycled, another four tons are being wasted.

The reuse market is healthy. Aluminum, glass and plastic are snapped up.

PET (polyethelyne terephthalate) cannot be recycled to become beverage containers.

State law required every jurisdiction to divert 50% of its waste from landfills by 2000.

Estimates are that 42% of waste, including beverage containers, is recycled.

July 2003: 1.5 billion gallons of bottled water guzzled up by Californians. Only 16% are recycled.

November 2003: plastic bottle waste tripled since 1995. Single-serve beverage containers, only 16% recycled in California. At that rate, the amount of water bottles thrown in the trash ten years from now would be enough to create a two lane, six-inch deed highway that stretches the entire coast of California.

Drinking Water

This unit is designed to answer these questions:

- Is it safe to drink the tap water?
- Is it safe to drink bottled water?
- Is it better to buy bottled water or get a water service (that delivers every week) than drink the tap water?
- Isn't it bad to drink water from the tap? Don't you have to use a water filter?
- How much water do I need to drink?
- After exercising, I need to drink a sports (sweetened) drink like Gatorade, right?

- Are they selling water in the school vending machines because the water in the drinking fountains is not clean? Is it not safe to drink from the drinking fountain? Or if water is available for sale in the vending machines, does that mean that the water from the water fountains is not safe?

- How is the drinking water fountain designed to prevent spread of disease?

- If the buildings and homes are old, the plumbing must be rusty, so the water can't be safe, right?

- Why is bottled water so popular?

- How is bottled water regulated?

Goal:

Understand that drinking water is necessary for health.

Recognize that tap water in SF is safe to drink.

Recognize that the EPS's current drinking water standards are designed to protect children and adults.

Recognize the value of drinking water and unsweetened fluids for reasons of health.

Recognize that bottled water is often purchased for the convenience of the container.

Wash out the reused water bottle; use a wide mouthed bottle to enable washing it.

Be able to state the considerations that affect choosing to drink tap versus bottled water.

Calculate the amount of fluids a teenager needs to consume (e.g., increased need)

Recognize that *mandated* federal drinking water standards are enforced in San Francisco.

As a result of law, on county, state and federal levels, _____ % of residences in the United States obtain can obtain safe drinking water from the tap. (*Where is there no law, or where is the law violated?*)

Water from _____ % of in San Francisco homes, rental units, schools and institutions meet safe drinking water standards. (*Where is there no law, or where is the law violated?*)

Recognize cultural water safety practices that reflect the international and culturally diverse

Bonus:

Lead. Recognize that exposure to elevated levels of lead is most harmful to growing fetuses and children through the age of 6 years old. Safe Drinking water standards are set for their safety.

As a result of this fact, laws exist to minimize the amount of lead in the urban environment. (Most lead contamination is from flaking paint in homes that were built pre-1970—before lead was removed from paint formulations.)

Where are environmental reports published? How does a citizen get access to these reports?

What is the history of environmental law on water?

Bonus: In many countries drinking water and water for hygiene meet different standards.

Instant expert readings:

EPA Drinking Water and Health, what you need to know.

EPA Children and Drinking Water Standards

The Facts About Bottled Water

Californians trashing recyclable bottles, International Plastics Task Force

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Vocabulary:

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PET PolyEthylene Terephthalate, used in bottle manufacture.

Redeem

Environmental Protection Agency (EPA)

Department of Public Health (DPH)

World Health Organization (WHO)

Safe Drinking Water Act (SDWA), is the main federal law that ensures the quality of Americans' drinking water. It was first passed in 1974 and has been modified in 1996. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities and water suppliers who implement those standards.

Bacteria

Heavy metals

Chloramines

Dehydration

Water filter

Taste

Weakened immune system. People with weakened immune systems from organ transplants, people with HIV/AIDS and other immune system disorders are at risk from certain bacterial water contamination. Water standards are set to consider this vulnerability, however more information is available.

Objectives:

Students can state two reasons water is necessary for health.

Students will identify two standards on the water report

Identify the amount of water needed to drink by youth who are exercising and not exercising.

Identify the numbers of calories added by drinking one soda daily for a year.

Taste test tap water compared to bottled water.

Identify the sources of lead in the environment.

Students will wash out sport bottles.

Single use / PET bottles

Action Plan:

Students will use Hetch Hetchy Mountain Water Project Analysis report to find standards for chemistry, microbial or metal content of water.

Students will identify the amount of water recommended for health.

Students will taste test water.

Students will state how PET bottles can be redeemed on campus and at home.

Students will receive sport bottle with Lowell logo at the end of the lesson.

What can I do with this information?

Drink 4-6 cups water per day.

Drink 1-2 cups 1% or non-fat milk per day, unless lactose intolerant.

Drink 1/2 cup juice, or less per day

Eat whole fruit and vegetables; produce that contains liquids

Minimize consumption of sweetened drinks.

Drink more water when ill. Watch that the very young and very old get enough to drink.

Recycle, redeem or reuse beverage containers.

Do not pollute drinking water supplies.

For more information:

Web sites:

www.EPA.gov/safewater/dwhealth.html

www.cawrecycles.org

www.ecologycenter.org/iptf/northamerica/catrashbottles.html

www.bottledwater.org

www.water-ed.org/projectwet

Cadillac Desert

Willett, Walter. Water chapter, Eat Drink and Be Healthy