

## Using NewsHour Extra Feature Stories

### STORY

#### **Californians Move to 'Toilet-to-Tap' Water Recycling**, 02/11/08

[http://www.pbs.org/newshour/extra/features/us/jan-june08/water\\_2-11.html](http://www.pbs.org/newshour/extra/features/us/jan-june08/water_2-11.html)

Estimated Time: One 45-minute class period with possible extension

[Student Worksheet](#) (reading comprehension and discussion questions without answers)

### PROCEDURE

#### **1. WARM UP**

Use initiating questions to introduce the topic and find out how much your students know.

#### **2. MAIN ACTIVITY**

Have students read NewsHour Extra's feature story and answer the reading comprehension and discussion questions on the student handout.

#### **3. DISCUSSION**

Use discussion questions to encourage students to think about how the issues outlined in the story affect their lives and express and debate different opinions.

### INITIATING QUESTIONS

**1. Where does our water come from?**

**2. How do you use water everyday and how much do you think you use each day?**

**3. Would you feel comfortable drinking water that was used, then recycled into tap water?**

### READING COMPREHENSION QUESTIONS – [Student Worksheet](#)

**1. What is California doing in response to water shortages?**

#### ANSWER

Several California cities are trying out new water reclamation projects that turn wastewater into drinking water.

The controversial water reclamation process, known as "Toilet-to-Tap," has been in place in Orange County since December and San Diego is planning to open its own water-purification plant this summer.

**2. Aside from drinking water, what are other ways recycled water is used in the United States?**

#### ANSWER

Californians began irrigating their crops and pastures with it in the early 20<sup>th</sup> century.

Up to half of the water in American rivers has been used, collected, treated and distributed downstream.

**3. What are the three steps in the filtration process?**

#### ANSWER

Upon entering the treatment facility, wastewater is first sucked up into thousands of tiny straws (no wider than three hundredths the thickness of a human hair) which help separate out bacteria.

Second, the water molecules undergo reverse osmosis, a process where intense pressure is used to force the molecules through a sheet of plastic.

Lastly, the remaining water molecules are exposed to ultraviolet light and mixed with peroxide for a final cleansing. The entire process ensures that not even the tiniest bacterium, virus, chemical or hormone can survive, and in many regards, it's actually purer than highly coveted mountain spring water, according to California's Department of Health Services.

**4. Where does San Diego currently get most of its water?**

**ANSWER**

Currently, San Diego imports 90 percent of its water from places like the highly sought-after Colorado River and the Sacramento-San Joaquin River Delta in Northern California.

**5. What are some of the other steps San Diego is taking to reduce its use of imported water?**

**ANSWER**

The city will combine its sewage water reclamation project with conservation efforts including planting native vegetation, collecting rainwater, and installing pressurized shower-heads and low flow toilets.

**6. What is expected to happen with the world wide water shortage by 2050?**

**ANSWER**

The United Nations predicts that severe water shortages affecting at least 400 million people today will affect 4 billion people, more than half of humanity, by 2050.

**7. What are some of the dangerous implications of water shortage around the world?**

**ANSWER**

Ki-Moon said the conflict in the Darfur region of Sudan was touched off by drought and that water shortages have contributed to poverty and social hardship in numerous countries, including Somalia, Israel, Sri Lanka, Colombia and Kazakhstan, he said.

DISCUSSION QUESTIONS (more research might be needed)

**1. Do you think water reclamation and filtration is a good solution for water shortages? Why or why not? Is there a difference between thinking it's a good idea and actually agreeing to switch over to recycled water? Discuss the disconnect between thinking something is good for someone else and thinking it is the right step for you.**

**2. What do you think the international community should do about the looming water crisis? What should be the role of the United States?**

**3. Research the water situation in your area. Where does your water come from? Does your city use water recycling? Brainstorm ideas about how to prevent, or fix, a water shortage situation in your town.**

**4. The U.N. claims that individuals need a little over 13 gallons of water a day for drinking, cooking, cleaning, and sanitation and over a billion people are unable to receive even that. In contrast, the average American uses close to 70 gallons of water a day, according to the American Water Works Association. What does that say about life in America compared to the rest of the world? Does this need to change, and if so, how?**

**Extension Activity**

Have students write a 300-500 word essay on this topic providing clear examples. Send your completed editorial to NewsHour Extra (extra@newshour.org). Exceptional essays might be published on our Web site.