

## **Grade 7 General Science**

# **How is Drinking Water Different in Other Areas of the World?**

### **Instructional Objectives**

At the end of this lesson, students will be able to:

1. Appreciate water shortages in other regions of the world
2. List solutions or consequences of water shortages
3. Name countries and regions that have water shortages
4. Identify why different regions have water shortages
5. Identify problems of sharing water sources
6. List solutions to water shortages
7. Identify ways politics affects water resources.

### **Pennsylvania Academic Standards**

- 3.5.7.D: Explain the behavior and impact of Earth's water systems
- 3.5.10.D: Assess the value of water as a resource

### **Content Explanation**

Not many students realize that clean, drinkable water is not as readily available in other regions of the world as it is in the United States. Many countries have less water than their population needs. Some countries must share a water source that runs through many countries. Protection of water sources is an issue for many countries- protection of water pollution and protection of water quantity. This politicizes the issue. Many countries have started to privatize water sources in order to get clean water for their people. This becomes an issue when people begin to debate the issue of selling a basic right for profit.

### **Lesson Summary**

Students will read articles related to water shortages around the world and answer questions about them. The class will discuss the articles.

## **Administrative Considerations**

This lesson involves a lot of reading. ESL students may have trouble with comprehension. Students with low reading comprehension skills may need some guidance.

## **Materials**

Articles and question sheets.

Articles I have used in the past include:

Ban Sale of Water for Profit

[http://news.nationalgeographic.com/news/2004/11/1105\\_041105\\_barlow\\_water.html](http://news.nationalgeographic.com/news/2004/11/1105_041105_barlow_water.html)

Global Water Shortage Looms in the New Century

<http://ag.arizona.edu/AZWATER/awr/dec99/Feature2.htm>

Where's the Water?

[http://flatrock.org.nz/topics/environment/effluent\\_for\\_the\\_affluent.htm](http://flatrock.org.nz/topics/environment/effluent_for_the_affluent.htm)

Not Dry as Dust

[http://whyfiles.org/131fresh\\_water/3.html](http://whyfiles.org/131fresh_water/3.html)

## **Body**

### **Engagement questions**

What are some facts about water in the U.S.?

Do you think those same are true about other countries?

What are some reasons we have access to clean drinking water in the U.S.?

What might affect a country's or region's water supply?

### **Exploration**

Students read articles and answer article questions.

### **Evaluation**

Students' question sheets, student discussion (teacher evaluation of students participation)

**How I've used this lesson in the past**

This is a week-long lesson usually that results in some lively discussion. This is a great lesson for cross-curricular teaching tying in language arts skills (reading, summarizing, and comprehending) and social studies skills (geography, history, politics). At the end of our week of discussion on this topic, I usually have the kids write an essay defending one side of the argument that water is a basic need and right and should be available to everyone or that water can be privatized and sold for a profit. In past years, after writing their essays, students took them to language arts class as a writing piece to edit and revise.

Last year, one of our staff members from India came in with a PowerPoint presentation and talked about water in India specifically. An issue in India is religion and education. People believe that certain water sources are sacred but are not educated enough to know that they are infecting the water source by bathing and washing animals in it. People drink from this believed to be sacred water source not knowing that they are harming themselves. This really had students thinking about how different things are in other parts of the world. Even something as basic a need as water wasn't a right elsewhere.

Name \_\_\_\_\_

**“Ban Sale of Water for Profit” Questions:**

1. What are two reasons that water doesn't reach people? Give an example of each and explain.

2. How is the sale of water becoming a profitable industry?

3. Shouldn't water be a public resource to be distributed by a government? Why isn't this the case in some places?

4. What is one area where cutbacks on water usage would have the greatest effect?

5. Write a paragraph supporting public (i.e. free) water for everyone OR supporting the privatization of water supplies. Use at least 3 pieces of evidence from the article for support.

## **“Global Water Shortage Looms in New Century” Questions:**

1. How many countries does the World Bank report that now have water shortages?
2. From where do many nations get water?
3. Why is it a problem to get your water from a border river?
4. The Earth has about as much water as it had during the time of the dinosaurs. Why are we so concerned about water shortages now?
5. Other than population growth, what else is causing the increase in water demand?
6. Will an increase in snow melt due to global warming be helpful in the water shortage? Why or why not?
7. What is one solution that can provide lots of additional water supplies and what is this?
8. Why do you think the U.S. is no longer involved in desalination research?
9. Why do you think 60% of nations involved in desalination are now in the Middle East?

10. Write a short paragraph telling your solution to the world's water problems- (here are some possibilities: Privatization, technology, reducing water usage, free water for all)

## **“Where’s the Water?” Questions:**

1. What are the two reasons that Lake Chad is shrinking?
2. How will loosening the arsenic standard for drinking water help the water shortage? How will it hurt us?
3. How many people die each year from poor drinking water, poor sanitation, or a dirty home environment?
4. What country may have the biggest water shortage problem? What issues in this country add to this problem?
5. Where does Israel get its water?
6. What does Egypt rely on for its water supply?
7. How much rainfall does Egypt get each year?
8. What may limit Egypt’s water supply?
9. What two places use the most water from the Colorado River?

10. What are some examples in this reading of water sources that are located or serve more than one country? Pick one and write a paragraph about how politics are affecting the water supply.



## **“Not Dry as Dust” Questions:**

1. How do water shortages increase cooperation between nations?
2. Why do African countries along the Nile want to dam up water upstream?
3. Why does Egypt not want this to happen?
4. What are 2 countries known for being good at recycling water?
5. In places like Europe and China, where there are larger rivers what is the biggest problem with the water supply?
6. Why is ‘free’ water not a good idea?
7. How do farmers get free water?
8. Do all farmers get free water? Why or why not?
9. By how much does water usage generally decline when people are charged?

10. Privatization is a solution to problems with water supply. What is this?

11. Who is this solution likely to affect the most? Why?

12. Give an example of each solution to water supply problems:

Technology-

Flooding-

Desalination-

13. Why will global warming and increased snow melt not help the water problem?