



UNICEF/HQ89-0812/LeMoynes

Water and Sanitation for All: Bringing the Issue Home

AN ELEMENTARY SCHOOL UNIT (GRADES 3-5)

TABLE OF CONTENTS

Unit Overview	1
Background Information	1
National Standards	6
Glossary	8
Lesson 1: The Big Picture	10
Handout 1: Map of Niger	12
Handout 2: UNICEF Video Script	13
Handout 3: Water, Wonderful Water!	14
Lesson 2: How Does Our Water Get Clean, and Why Does It Matter?	15
Handout 4: Habu and Diana	17
Lesson 3: You Can Be Part of the Solution!	18

TeachUNICEF was created by the U.S. Fund for UNICEF's Education Department. © 2008

Unless stated otherwise, the source for all charts, figures, maps, and statistics used in this unit is: United Nations Children's Fund, (UNICEF), New York. Additional sources are noted when they are required. Website addresses (URLs) are provided throughout this unit for reference and additional research. The authors have made every effort to ensure these sites and information are up-to-date at the time of publication, but availability in the future cannot be guaranteed.

UNIT OVERVIEW

Water and Sanitation for All: Bringing the Issue Home

An Elementary School Unit (Grades 3-5)

Unit Overview

Water and Sanitation for All is a unit of three lessons designed to:

1. Raise awareness of the problems facing children with inadequate access to clean water or sanitation facilities.
2. Increase students' understanding of the world water crisis as one that affects everyone.
3. Explore how organizations, agencies, and individuals are working to address the problems.
4. Encourage students to take their own steps in addressing the local and global issues of water and sanitation.

Lesson 1: Students explore the “big picture” of water and sanitation and begin to see how vital water and sanitation is to life, health, education, and well-being. They learn about what UNICEF is doing to aid children and communities affected by the lack of safe water or adequate sanitation facilities.

Lesson 2: Students are introduced to the notion of water treatment and why it is so important to have clean water and sanitation facilities. They create a water filter to help them develop an understanding of the need to treat water so it will be safe to drink.

Lesson 3: Students learn about the need to conserve water and study water use around the world. They explore ways to conserve water and learn how to record their own water use.

Background Information¹

The conceptual gap between turning on a kitchen water faucet and walking four kilometers to fetch and lug water back home is almost too large for most adults to grasp, much less for schoolchildren. The same can be said about a household bathroom versus a distant communal latrine shared by several families. Furthermore, the notion of not having access to a toilet or a hand-washing facility at school or work is removed from many lives in the United States. Yet nearly 2.5 billion people² do not have access to improved sanitation facilities. It is a bleak reality.

UNICEF Water, Sanitation and Hygiene (WASH) programs are active in over 90 of the more than 150 countries in which UNICEF works; helping to improve access to water and sanitation as well as improving critical hygiene behaviors such as hand washing with soap. In countries such as

¹ Statistics were updated in 2010.

² Source: <http://www.unicef.org/wash/index.html>

the U.S., where water is treated, piped into homes, and then carried off by efficient sewage systems, the availability of clean water, proper hygiene, and sanitation is mostly taken for granted. In areas where human waste is not carried off by sewage systems, or safely disposed of in pit latrines or other sanitation facilities, proper hygiene awareness becomes critical. UNICEF WASH programs attempt to raise awareness of these issues.

Currently, UNICEF monitors nations according to whether they have “improved” or “unimproved” access to water and sanitation. Improved access includes countries with water sources such as protected wells, harvested rainwater, and public standpipes, and sanitation facilities such as septic tanks and pit latrines. Currently, almost fifty percent of the developing world’s population – 2.5 billion people – lack improved sanitation facilities, and over 884 million people still use unsafe drinking water sources.³ The number of individuals without these basic services is expected to continue to grow. What is considered a dangerous situation could escalate into a global crisis as water shortages begin to appear in industrialized nations as a result of global warming, lack of conservation measures, and increased contamination of the world’s water supply. Although water covers over 70 percent of the earth’s surface, just a fraction of it is useable, the ocean holds 97 percent, the remaining 3 percent is fresh water that is found hidden in underground aquifers, frozen in glaciers or in rivers and lakes.⁴

Globally, more than 125 million children under 5 live in homes without access to an improved water source, and more than 280 million live in households without improved sanitation facilities.

Source: Progress for Children: A Report Card on Water and Sanitation. UNICEF, September 2006

“Water is a limited natural resource and a public good fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights.” — United Nations Economic and Social Council, November 2002.

Water and Children, Sanitation and Survival

The effects of not having access to clean water and adequate sanitation facilities go far beyond convenience and aesthetics. Lack of safe water and sanitation is the world’s single largest cause of illnesses, and the second highest cause of preventable childhood deaths with about 4,100 children⁵ dying daily from waterborne illnesses. The lack of adequate sanitation facilities is just as deadly — 1 gram of feces can contain viruses, bacteria, parasite cysts, and parasite eggs. Water and sanitation-related illnesses include diarrhea, which kills nearly 2.2 million children, mostly under 5 each year; malaria, a disease exacerbated by poor drainage and uncovered water; and trachoma, a disease caused by the lack of water combined with poor hygiene practices has blinded millions of people, studies have found that access to an adequate water supply could reduce trachoma by 25%.⁶ In addition, hand washing with soap is linked to dramatic reductions in the incidence of respiratory illnesses such as pneumonia — the number one cause of child mortality globally.

3 Source: <http://www.unicef.org/wash/index.html>

4 Source: <http://oceanservice.noaa.gov/facts/wherewater.html>

5 Source: <http://www.unwater.org/flashindex.html>

6 Source: <http://www.childinfo.org/water.html>

For those living without access to a safe water supply, finding and carrying water can become a chore that eclipses all others and a burden that might determine a child's future. Women and children, especially girls, are most often the family water collectors. Fetching water can mean walking to a water source many miles away or waiting for hours in water lines. In about 90 countries around the world including Nicaragua, Iraq, Sudan, Colombia, Vietnam, and Uzbekistan — many girls miss school because they have to collect water or stay home to care for family members sickened by water-based illnesses, which is often caused by contaminants such as parasites. Of the children who do attend school, many are faced with the same challenges there. Lack of clean water for drinking and hand washing and the absence of private and adequate toilets compromises children's ability to learn and often causes them to leave school altogether. Girls are especially vulnerable to this; many drop out once they reach puberty due to the lack of private and safe sanitation facilities. In short, children stay in school longer, perform better, and are less susceptible to decreased mental and physical development when they have access to improved water and sanitation.

“Safe drinking water and adequate sanitation are crucial for poverty reduction, crucial for sustainable development, and crucial for achieving any and every one of the Millennium Development Goals”
– UN Secretary-General, Ban Ki-moon

Source: http://www.unicef.org/wash/index_bigpicture.html

The UN and UNICEF: Responding to the Need

In September 2000, the UN crafted a set of eight goals, the Millennium Development Goals (MDGs), that affirmed the world's “shared duty” to all people, especially children and the poor. These goals include aims such as halving extreme poverty, stemming the spread of HIV/AIDS, and providing universal primary education. The MDGs have brought together nonprofit organizations, governments, research and policy institutions, and advocacy groups on a global level in an effort to improve the living, learning, and working conditions of the world's most vulnerable. All of the MDGs are interlinked. For example, although goal #7 speaks specifically to environmental issues, it is recognized that providing water and sanitation is crucial for the success of all the MDGs. Without ensuring safe water, sanitation, and hygiene education for all, it will be impossible to meet the other goals.

UNICEF has used the MDGs, among other goals set by other international organizations, to guide its work in water and sanitation. UNICEF began its first water and sanitation program in India in 1966 and has since worked in numerous developing countries on this issue, with WASH programs that help to provide clean water, latrines, and hygiene education to children and their communities. UNICEF's strategy revolves around four elements: creating child-friendly facilities, providing training in hygiene education for teachers and children, offering outreach to communities, and contributing to policy work for the development of sustainable models.



Thanks to the work of national governments, communities, and international partners such as UNICEF, the world is currently on track to halve the number of people without access to a safe water supply by 2015.

The work to provide sanitation, on the other hand, is much further behind, though, and in recognition of this need to escalate efforts globally, 2008 was designated the International Year of Sanitation (IYS)⁷.

⁷ Source: <http://esa.un.org/iys/>

The IYS has five key messages:

1. Sanitation is vital for health.
2. Sanitation is social development.
3. Sanitation is a good economic investment.
4. Sanitation is good for the environment.
5. Sanitation is achievable.

“We Are All Downstream”: Water Connects Us

It is impossible to overstate the impact of water and sanitation in our lives. Far from being a source merely for drinking and bathing, water is needed by all types of industries: agriculture, power production, household use, ore and mineral extraction, livestock husbandry, and other commercial uses. The amount of water used in everyday products is vastly larger than most people realize. It takes 1000 to 3000 liters of water to produce a kilogram of rice and 13,000 to 15,000 liters to produce a kilogram of grain-fed beef⁸.

It takes over 400 gallons of water to cultivate the cotton for just one T-shirt. This doesn't even take into account the manufacturing process, which uses over 600 gallons more.

Source: Chapagain, A.K. and Hoekstra, A.Y.: Water Footprints of Nations. Value of Water Research Report Series No.16. UNESCO-Institute for Water Education, November 2004.

We all draw water from the same global “well,” and we need increasingly more of it with increased demand from agriculture, industry, and municipal use. Instead of having access to more, however, we are faced with the prospect of making do with less as pressure on our water sources intensifies. In the U.S., the impact is that we are becoming more conservative in water usage patterns and regulating more stringently industry and effluent standards. In developing countries, however, this situation is decidedly more acute because the “common well” is often used for multiple purposes ranging from bathing to cooking, to running small businesses. Water sources are often untreated and unregulated—leading to precarious levels of pollution that threaten public health and safety. For this reason, a heightened priority is placed on basic hygiene and sanitation in developing countries (while more structural changes in water treatment and regulation can be put in place), while “more developed” countries are at the stage of regulating consumption patterns and industrial effluents.

The world’s freshwater resources are becoming increasingly contaminated by pesticides, industrial runoff, and human waste. Global warming is wreaking havoc on weather patterns, leading to droughts, floods, and other extreme climatic changes that can affect water supplies. Communal water sources such as glaciers are melting, decreasing the amount of runoff that fills rivers and lakes, and, additionally, more precipitation is coming as rain rather than as snow, leaving snow packs insufficient to supply reservoirs during the summer months. Around the world, countries are dealing with water scarcity in various ways: rationing/ regulation (U.S.), wastewater reuse (global but largely in the Middle East and North Africa), water recycling (France), and ecosanitation (a way of recuperating the nutrients in wastewater and returning them to productive uses), among others.

⁸ Source: http://www.unwater.org/statistics_sec.html

The connections between domestic consumption, use of water and sanitation, and global water management, though deeply evident to many, remains an abstract notion to most of us in the United States. Because most of our water supply is clean, cheap, and easily accessible, we believe it to be limitless. For some, however, the fragility of our own water system is becoming painfully evident. In 2007, Georgia officials warned that Lake Lanier, a reservoir in northern Georgia that supplies over 3 million residents with water, was on the verge of depletion, with smaller regional reservoirs in even worse condition.⁹ Water rationing is a reality in many places in the West and South, and it will become increasingly common throughout the United States. Likely we will look to new and innovative ways of managing our resources more responsibly in the future, borrowing from the examples of countries that are already managing scarce water resources. We are all connected to this finite resource, and we must connect ourselves to those who struggle for it so that we can work to find long-lasting, global solutions.

For the most up-to-date statistics and information, please visit:

<http://www.childinfo.org>

<http://www.unicef.org/wash>

<http://www.unesco.org/water>

<http://www.unwater.org>

⁹ Source: <http://www.msnbc.msn.com/id/21393296/>

National Standards

The TeachUNICEF lesson plans are designed in line with National Content Standards. Using the National Content Standards as a guide, these lessons can be aligned with State Standards.

	Lesson		
	1	2	3
National Organization			
National Council for the Social Studies (K-12) Source: Expectations of Excellence — Curriculum Standards for Social Studies			
People, Places, and Environments Social studies programs should include experiences that provide for the study of people, places, and environments.	✓	✓	✓
Global Connections Social studies programs should include experiences that provide for the study of global connections and interdependence.	✓	✓	✓
National Council of Teachers of English & International Reading Association (K-12) Source: Standards for the English Language Arts			
Standard 1: Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace.	✓	✓	
Standard 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.	✓		
Standard 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.		✓	
National Academy of Sciences (K-4) Source: National Science Education Standards			
Content Standard A: Science as Inquiry As a result of activities in grades K-4, all students should develop <ul style="list-style-type: none"> • Abilities to do scientific inquiry • Understanding about scientific inquiry 		✓	

	Lesson		
	1	2	3
National Organization			
<p>Content Standard D: Earth and Space Science As a result of activities in grades K-4, all students should develop an understanding of</p> <ul style="list-style-type: none"> • Properties of earth materials • Changes in earth and sky 		✓	
<p>Content Standard F: Science in Personal and Social Perspectives As a result of activities in grades K-4, all students should develop understanding of</p> <ul style="list-style-type: none"> • Personal health • Characteristics and changes in populations • Types of resources • Changes in environments • Science and technology in local challenges 	✓	✓	✓
<p>National Council of Teachers of Mathematics (K-12) Source: Principles and Standards for School Mathematics</p>			
<p>Data Analysis & Probability All students should</p> <ul style="list-style-type: none"> • Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer • Develop and evaluate inferences and predictions that are based on data 			✓

Glossary

bacteria a class of microscopic organisms (that is, living things that are so small they cannot be seen without a microscope), many of which cause diseases.

borehole/borewell a well that has been drilled or bored by a machine to reach a source of underground freshwater.

contaminant something that makes water or other substances impure or unfit for use.

dehydration a condition in which your body loses water. Serious dehydration can be fatal.

development growth and change that improves standards of living and quality of life. “Sustainable” development is doing this without causing social or environmental damage, or depleting resources.

excreta feces and urine.

filter a device or material that allows liquid through but stops solids and particles of a certain size, so the fluid is cleaned.

hygiene the science of keeping healthy, particularly by means of sanitary practices such as washing hands after using a toilet or latrine and before handling food.

improved water sources defined in the Millennium Development Goals as a household connection to the main water supply, a public standpipe, a borehole, a protected dug well, a protected spring, or rainwater collection.

improved sanitation facilities defined in the Millennium Development Goals as connection to a public sewer, connection to a septic system, a pour-flush latrine, or a pit latrine.

latrine a site or structure (not connected to a main water supply and sewer) designed to receive and dispose of excreta. A pit latrine is a simple pit covered by a slab of wood or concrete with a drop-hole. A “pour-flush” latrine uses water to flush away the excreta into a pit.

parasite (adj. **parasitic**) an animal or plant that lives in or on another “host” animal or plant, taking nourishment from the host without giving anything in return.

safe water water that is free of contaminants. It often comes from improved water sources.

sanitation measures to promote good health, especially those involving safe disposal of excreta and maintaining a clean environment.

sewage waste material and water carried off by sewers or drains.

trachoma an eye disease caused by an infectious agent similar to bacteria. Trachoma may eventually lead to blindness. Face washing with clean water and soap can prevent the transmission of the disease, especially among children.

typhoid fever a disease caused by bacteria that usually enter the body through the mouth in contaminated food or water. Typhoid causes a high fever that lasts for three weeks or more and can be fatal. Typhoid can be treated with medications and prevented by use of clean water.

wastewater used water—including sewage—from homes, communities, or industries.

waterborne disease a disease that spreads through water containing human or animal feces and urine, either when people drink such water directly or they eat food that has been cleaned with it. Waterborne diseases include cholera and other diarrheal disease, typhoid fever, polio, roundworm, and whipworm.

LESSON 1

Water and Sanitation for All: Bringing the Issue Home

An Elementary School Unit (Grades 3-5)

THE BIG PICTURE

TOTAL TIME: 45 MINUTES

Objectives

Students will:

- Become aware of the centrality of water and sanitation in our daily lives.
- Become familiar with the challenges facing people without ready access to safe water and sanitation.
- Discuss and better understand the work UNICEF is doing to bring water, sanitation, and hygiene to children.

Vocabulary

The following words may not be daily occurrences in a student's vocabulary. Feel free to use this list as a resource for students to expand their working vocabulary as they encounter these words in this unit.

- Conserve
- Drought
- Filter
- Groundwater
- Microbes
- Sanitation
- Vapor
- Well

Materials Needed/Setup

- Computer with Internet access, connected to video site
- Paper and pens or pencils
- Handout #1, "Map of Niger"
- Handout #2, "UNICEF Video Script"
- Handout #3, "Water, Wonderful Water!"

Directions

1. **(20 minutes)** Explain to the class that the next three lessons will focus on the state of water and sanitation around the world and how it affects everyone, especially children.

- **Word web:** Draw a circle on the board and write the word water inside the circle. Ask students to call out related words that come to mind—such as liquid, cold, clean, lake, and river. Encourage students to suggest words that describe how they get their water (faucet, bottle, well).
 - Ask students to name the ways in which they use water at home. Answers may include: shower or bath, cooking, drinking, washing the car, watering the lawn, filling the swimming pool, turning on a sprinkler, and flushing the toilet. Mostly it consists of turning on a tap—easy. Ask if any student has ever experienced a water shortage at home due to a storm or a drought, even for a short period. How did it change daily life? What might life be like if they had no faucets or toilets or hoses?
- 2. (15 minutes)** Tell students that people all over the world, including millions of children, have no running water or toilets. Tell them they are going to watch a video about a community in Niger, a country in Africa. Distribute Handout #1, “Map of Niger.” What do students notice about Niger that might make water supply an issue? (It is landlocked, and the Niger River is the only major waterway.) Tell students that you will show the video two times. The first time they watch, they should pay special attention to the things they see—the landscape and the machinery. The second time they watch, they should pay special attention to what the narrator is saying.

Before watching the video it is important to stress that there are communities within every country that have access to clean water and sanitation and others that do not.

Video: “WASH” Strategy Provides Safe Drinking Water and Basic Sanitation to Niger
<http://www.youtube.com/user/unicef#p/search/0/fWrHmbItOZo>

Note: Depending on your students’ age and level, you may choose one of the following alternate ways to use the video:

- Turn off the sound and show the video while providing students a summary or reading some or all of the transcript (see Handout #2, “UNICEF Video Script”).
 - Play the video in small chunks, stopping to ask questions and elicit observations from students.
 - Play the video with no sound, asking students to observe what is going on, and then play the video with sound a few times, asking students to listen to the narration.
- 3. (10 minutes)** After watching the video, ask students to write down or tell the person next to them two points they remember from the video. Ask a few students to share with the class. Decide as a class the most important points from the video.
- 4. Homework:** “Water, Wonderful Water!” Distribute Handout #3 and have students make a list of at least five ways they use water at school and at least five ways they use it at home.

To find additional videos visit;
TeachUNICEF’s TeacherTube Channel
 at <http://teachertube.com/videoList.php?pg=videonew&cid=44&sid=45>
UNICEF’s YouTube Channel at
<http://www.youtube.com/user/unicef?blend=1&ob=4>

As an additional exercise, give students three statements about the video and ask them to choose the most accurate summary.

Map of Niger



UNICEF Video Script

September 8, 2006—"WASH" strategy provides safe drinking water and basic sanitation in Niger.

You are watching UNICEF television.

In the villages of Niger it is the women and girls' responsibility to seek water for their family's needs. This task has become much easier for Ayu Yaou, who is now able to fetch safe drinking water from a nearby fountain that is supplied by this solar-powered pump.

Ayu also heads the village water committee that manages the water system.

Soundbite: (Hausa) Ayu Yaou, Mother and Head of Water Committee:

"Our burden is a lot less because we don't have to walk for hours to collect water that is now available in the village. The water quality is improved significantly, and it is now drinkable. Our children are healthier."

The solar-powered water system in Guidan Gazobi was installed by UNICEF and supplies safe drinking water to 3,010 people. It is monitored and maintained by women in the community.

64% of people in rural Niger do not have access to safe drinking water. They rely on stagnant pools of water for drinking, cleaning, and washing. As a result, waterborne diseases, lack of hygiene, and inadequate sanitation perpetuate a cycle of poverty and malnutrition in children.

Now Ayu can provide a more sanitary environment for her daughter Raykia. She also has one less obstacle to overcome and may focus her attention on other income-generating activities and caring for her daughters.

Soundbite: (French) Anne Ouedraogo, UNICEF Program Assistant: "Since they had this system, their chores are less time consuming, and reduction of the waterborne diseases has been significant."

UNICEF has so far supported the construction and rehabilitation of 44 boreholes and 28 cemented wells in Niger. The Water, Sanitation and Hygiene Program adheres to the concept that easing the lives of women and children benefits the entire community.

With access to safe drinking water and improved basic sanitation practices, the life and health of Raykia and other children is greatly improved.

This is Nina Martinek reporting for UNICEF television.

Unite for children

Water, Wonderful Water!¹

Water is one of the most important things in life. It tastes good, it feels cool, and it keeps us clean.

There are so many ways that water helps you live your life. Think of at least five ways you use water at home and at least five ways you use water at school. Write them down in the lists below.

At Home

At School

1.

1.

2.

2.

3.

3.

4.

4.

5.

5.

¹ Source: Based on the New York City Department of Environmental Protection activity "Hang On To Water."

LESSON 2

Water and Sanitation for All: Bringing the Issue Home

An Elementary School Unit (Grades 3-5)

HOW DOES OUR WATER GET CLEAN, AND WHY DOES IT MATTER?

TOTAL TIME: 45 MINUTES

Objectives

Students will:

- Become familiar with the water cycle.
- Better understand the water treatment process.
- Better understand the dangers of unclean water.

Materials Needed/Setup

- U.S. Environmental Protection Agency: “Thirstin’s Water Cycle Adventure” found at http://www.epa.gov/safewater/kids/pdfs/graphic_grades_k-3_watercycle.pdf.
- Cotton balls and paper towels
- Two plastic cups per student—half of the cups pierced with small holes in the bottom
- “Dirty” water (water mixed with a combination of soil, food coloring, and/or vegetable oil)
- Handout #4: “Habu and Diana”

Directions

1. **(5 minutes)** Ask students where they think the water from their faucets and hoses comes from and where it goes when they pull the plug or flush the toilet. What can happen if your drinking water isn’t clean or you don’t have flush toilets?
2. **(20 minutes)** Tell students that they are going to learn about how water is made safe for people to drink. Put students in small groups. Distribute the U.S. Environmental Protection Agency handout “Thirstin’s Water Cycle Adventure.” Go over the diagram to define unknown terms and

As a whole class or small group activity consider watching an interactive explanation of the water cycle provided by the U.S. Environmental Protection Agency at http://www.epa.gov/safewater/kids/flash/flash_watercycle.html.

to familiarize students with the basics of the water cycle. Ask students to look at the places where the water comes from (rain, groundwater). What might the water in the well have in it? (Dirt, rocks, pollutants, animal feces) Tell students that before a person can drink water, it has to be cleaned and filtered. Students will now create their own water filter to see how it's done.

3. **(20 minutes)** Distribute cotton balls, paper towels, and plastic cups to each group. Take students through the following steps:
 - Line each pierced cup with a layer of paper towel and place each pierced cup about halfway down inside a nonpierced cup.
 - Add cotton balls to each pierced cup; these and the paper towel will act as the filter.
 - Add “dirty” water to each cup.
 - After the water has run through, students should pull out the “filter” cup and examine the water that's left in the other cup. They can pour the water through the filter again to see if the water gets cleaner each time.
4. Explain to students that even if the water looks clean, it still isn't safe for drinking. Microbes, or invisible particles in the water, can be cleaned with chemicals and other treatment methods. To purify their water, people in places where UNICEF works use filters that remove both solid substances and microbes. They know that even if water in a river or stream looks clean, they shouldn't drink it—just as the students shouldn't drink untreated water, even if it looks clean. Ask the students if they know how their water gets cleaned.
5. **Homework:** Distribute Handout #4, which includes two short stories about Habu and Diana. Instruct students to read the stories of Habu and Diana and draw pictures to illustrate one or more parts of the story.

With older students who might benefit from additional writing practice, have them write a story about their own water use during a typical morning.

Habu and Diana

Read the two stories below, and draw a picture to go with each one.

Habu

Habu lives in Niger, in Africa. When he wakes up in the morning, he gets dressed and walks to the outdoor water tap that his family shares with neighbors. He takes a drink of water. Habu puts a bucket under the tap and fills it. He carries the water back home to his family. Habu's mother pours some water into a large pan so that Habu can wash himself. When Habu is done, his mother uses the bath water to feed the plants in her garden.

Diana

Diana lives in Ohio, in the United States. When she wakes up in the morning, she walks to the bathroom in her house and turns on the tap. She takes a drink of water. Diana's mother turns on the water in the tub so that Diana can have a bath. She adds lots of bubbles to Diana's bath. When Diana is done, she pulls the plug, and the water goes swish down the drain.

LESSON 3

Water and Sanitation for All: Bringing the Issue Home

An Elementary School Unit (Grades 3-5)

YOU CAN BE PART OF THE SOLUTION!

TOTAL TIME: 55 MINUTES

Objectives

Students will:

- Become familiar with the concept of water conservation.
- Become aware their own water use and how to conserve water.
- Discuss ways that they can help to raise awareness in their families and among their peers.

Materials Needed/Setup

- National Geographic: “Water Footprint Per Capita” <http://earthpulse.nationalgeographic.com/earthpulse/earthpulse-map>
- Worldmapper: “Water Use” <http://www.worldmapper.org/display.php?selected=104>

Directions

1. **(10 minutes)** Discuss the homework from the previous lesson, “Habu and Diana.” Have students share their pictures and then discuss with the students Habu’s and Diana’s conservation and access to water.
2. **(10 minutes)** Ask students to look again at the water cycle handout from the previous lesson. Point out that the water going into the house is the same water over and over again. It rises from the lake into the clouds as vapor, turns into rain, and helps to fill the well and the lake again. The water we have now on earth is the same water that we’ve had for millions of years. We can’t make more water, yet we need more of it for the many new things we use it for. Because of this, we have to conserve water, which means we must use it carefully and not waste it. This way we’ll be able to have enough for everyone.
3. **(20 minutes)** Tell students that they are going to look at a map(s) that shows how much water people in different countries use in a whole year. Some countries use more water than other countries. Ask students if they think that people in the U.S. use more water than people in other countries, or less. Show or distribute the National Geographic map, “Water Footprint Per Capita” and/or the Worldmapper “Water Use” map. Ask students:

- Which region of the world appears to use the most amount of water? And the least?
 - How does the water use of the U.S. compare to other countries?
 - Why do you think some countries use more water than others?
 - Does having access to water impact a countries economy?
4. **(15 minutes)** Our country uses more water than most countries. We can try to change that if we use only the water that we need and if we make sure not to waste water. What are some ways we can conserve water at home and at school? Divide students into small groups and have them make lists or draw pictures of ways to conserve water. Post the lists or pictures around the room and ask students to walk around and review each other’s work. Discuss the ideas and explore which ones are “doable.”
5. **Homework:** Have students take home the New York City Department of Environmental Protection, “Weekly Water Use Report Card.” Ask them to keep track of their water use for one week and to bring the card back to class to share with their classmates. To download this activity visit <http://www.nyc.gov/html/dep/pdf/workbook/page7.pdf>.

Ask your students to tally their answers to see how much water the entire class uses per week.

Unit Expansion Ideas

- Have students create water cinquain poems. See student samples at http://www.nyc.gov/html/dep/html/news/tapwalkcinquains_2008.shtml.
- Create posters, flyers, and banners about conserving water to post at school above drinking fountains and sinks and in hallways.
- Read about children in other countries where UNICEF has programs <http://www.unicef.org/voy/>.
- Develop lessons about the importance of hand washing in preventing disease <http://globalhandwashingday.org/>.
- Use a world map to identify other countries affected by water and sanitation issues. This can lead to further lessons in geography, math, creative writing, art, and more.

Service Projects

- Create a “Drip Squad” at school, and have student squad members look for leaks and report them.
- Ask students to hand out copies of the “Weekly Water Use Report Card” to members of their neighborhoods, scout troops, or places of worship to encourage others to keep track of their water consumption.
- Have students write a play about water and sanitation to perform at a school assembly.

