

WITH EYES TO SEE



PEACE AND JUSTICE CONCEPT: WATER

ideas for
teachers

who want
to
integrate
social
justice
concepts

into what
and how
they teach

If one looks at images of the planets in our solar system, it is readily obvious why earth is called the "water planet": water covers 71% of the earth's surface. However, we cannot use most of this water for consumption, agriculture, or industry because the vast majority of the world's water (97%) is salt water in seas and oceans. We do not readily have access to the remaining 3% of water either because two-thirds of the fresh water in the world is frozen in polar ice sheets and glaciers. In actuality, only a fraction of 1% of the world's water is available for our use.

It is worth noting here a few other water related statistics:

- Percentage of the world's fresh water that is used for agriculture: 70%
- Number of people in the world who drink unclean water: 1.2 billion
- Number of people in the world who live without proper sewerage systems or toilets: 2.5 billion
- Number of people who die each year from water-related diseases: 500 million
- Estimated growth of the world's population by 2025: 2 billion

In most homes in this country we get a steady supply of clean water every time we turn on a tap. Is this because we have more water in this country than other regions of the world? Is there less population density? Are we more careful and frugal in the use of our water than other countries? Is it that we have more financial resources in this country that allow us to build water related infrastructure? What is the current state of the rivers, lakes, and aquifers that provide us with our water in this country? In other countries? Who owns the water of the world? In a country? In a village?

It has been widely quipped that "water is the oil of the 21st century." Considering the implications of the above statistics and the essential nature of water in sustaining life, the importance of water around the world cannot be overstated. The purpose of this edition of With Eyes to See, the second of three that will be distributed this school year, is to help teachers and students explore water in the world and their own communities, and to begin to answer some of the questions listed above. Consistent with the approach of this newsletter, activities are presented here which connect LOCAL water concerns and realities with those around the WORLD. Dive in!

February
2006

A-12

Where Does My Water Come From?

Water is a resource that we all use every day, and for most of us in this country, it magically appears every time we turn on a faucet; the magic continues as the waste water flows down the drain. How many students know where the water in their home comes from and where it goes once used? Does knowing this information affect how we use water? Use the following exercise to find out.

Have students get in groups of 3-4, and to answer (off the top of their heads) the following two questions: What is the process, from source to tap, that brings water to where I live? And, what happens to my waste water after it goes down the drain? Have each group give a summary of their findings. As a large group, brainstorm a list of resources for finding exact answers to these two questions. Then, have groups of students use the different resources to answer the questions. Using the information they collected, have the students create graphic representations of the water systems in their area.

Lastly, ask the students if knowing the above information has any impact on how they use water.

"All the water that will ever be is, right now."
National Geographic
October 1993

A-12

How Much Does My Water Cost?

Most students are probably aware that the water in their home costs something, either in terms of the drilling of a well, buying a pump, and ongoing upkeep, to urban systems that charge for the amount of water one uses. How much does the water cost that the students use in their home? To answer this question, have small groups of students meet and guesstimate what their family has to pay each year for their water; put the estimates on the board. Next, brainstorm how to find out this information.

Most water bills in urban areas list water usage and cost/unit. Other areas charge rates based on home and land size, not on amount used. Other homes pay based on the upkeep of a well. The first example is easiest as it lists both usage and cost; the second requires some investigation, probably through the city's water department; the third requires interviews with individual home owners.

Much like the previous activity, how does knowing water costs affect how the students use water? Would this be different if their families were charged differently for their water (e.g. would they use water differently if they had to pay for every drop, or if they are charged a flat rate no matter how much is used?). The same process can be used to determine the costs of waste water/sewage after it leaves our home.

"When the well is dry, we know the worth of water."
Benjamin Franklin
Poor Richard's Almanac,
1746

A-12

Now, How Much Does My Water Really Cost?

An important exercise related to the above activity would be to look at the unseen environmental costs of our water usage: what are the costs associated with reduced lake levels, or shrinking aquifers, or rivers that "run out" before reaching their destination, or drain systems that overflow into lakes/rivers during storms, etc.? Are the effects of these water usage concerns reflected in our water bills? For example, are communities in Mexico compensated for the reduced water quality and quantity that crosses the border from the U.S. after we take what we need for drinking, industry, and agriculture? Who pays for the estimated \$2.4 billion dollars of loss that is a result of the Colorado River Delta drying up, and that the Colorado River almost never reaches the Gulf of California anymore? What other "hidden" costs are there to our water usage?

What Does Water Cost Around the World?

6-12

Knowing how much water costs in our own community can be informative, and possibly surprising, but when this is compared with what our sisters and brothers around the world pay for water in their communities, the learning takes on new meaning.

Once students, through the page 2 activities, discover how much their families' pay for water, a comparison can be made with people in other countries. By searching on the internet, students can find related numbers from various countries, or start with the following: in Chilpancingo, Mexico, people pay \$1.50 for every 44 gallons of water they buy (delivered by truck to their homes, which lack running water); some math may be needed to convert the students' local water costs to gallons.

To take this another step, how much does water cost relative to income, i.e. do people in Chilpancingo pay more of what they earn for water than in the students' community? Using the minimum wage in your community, figure out the daily wage (minimum wage x 8 hours); the daily minimum wage in Chilpancingo is \$5.00/day. With these numbers, the students can figure out the percentage of the daily minimum wage that each community has to pay. It is most likely that the students' families pay A LOT LESS for water, relative to income, than communities around the world.

(adapted from *Rethinking Schools*, Fall 2004, Bob Peterson's article entitled *Measuring Water with Justice: A Multidisciplinary Lesson That Explore Water Issues*. Available online at www.rethinkingschools.org)

"The deeper the waters are, the more still they run."
Korean Proverb

"Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect."

Chief Seattle

How Much Water do I Use Compared to the Rest of the World?

4-12

If your students have done the previous water exercises, or if they have looked at water related issues before, then they have probably thought about their own water usage. For most indicators, we in the United States use a larger share of the worlds resources than most people throughout the world, and water is no different.

Using the exact amount each student uses per day, or average rates for their community or the U.S., find average water use for people in other countries. Depending on the statistics used, average daily water use is anywhere between 80 and 175 gallons per person per day in this country. Compare this with a country like Egypt (40 gallons/day), Costa Rica (23 gallons/day), or Mozambique (3 gallons/day).

Finding out this information is only the first step: what do these numbers tell us? Have the students get in small groups and come up with as many questions and thoughts as they can about the differences which may include the themes of lifestyle, cultural norms, availability of water, cost of water, geography, etc. What do we do with this information?

Younger Children and Water

1-6

As a way for younger children to start thinking about water and how it is used, have them take a short quiz on water found at www.un.org/cyberschoolbus. The quiz is colorful and combines geography, math, and natural resources/conservation with questions like how much water do each of us use in a day, how much water does it take to make a newspaper, and what happens to the water sprayed on agricultural fields? Students can click on various images to get water-related facts and then take the quiz.

RECOMMENDED

"The formula for water is H₂O. Is the formula for an ice cube H₂O squared?"
Lily Tomlin

"The people are like water and the ruler a boat. Water can support a boat or overturn it."
William Shakespeare
The Tragedy of King Richard the Third

RESOURCES

The following is a list of websites that contain much useful information about WATER.

www.worldwater.org

This site offers a wealth of up-to-date water data, as well as an extensive list of Web links to organizations, institutions, and individuals working on global freshwater problems and solutions.

www.thewaterpage.com

Visit this site to learn about sustainable water use and management in Africa and other developing regions.

www.unesco.org/water/water_links

Log on to this site and find UNESCO's lengthy list of water-related websites from around the world.

water.usgs.gov/watuse

Good information on United States water use estimates and water use trends from U.S. Geological Surveys.

And a book....

Troubled Water: Saints, Sinners, Truths and Lies about the Global Water Crisis, edited by Anita Roddick, contains essays, facts, quotations, drawings, and diagrams about the global water crisis from a variety of viewpoints.

CONCERN AMERICA

is an international development and refugee aid organization that sends doctors, nurses, engineers, educators, and nutritionists as volunteers to train and empower the materially poor in Mexico, El Salvador, Guatemala, Bolivia, Colombia, Guinea, and Mozambique.

In support of these projects, Concern America offers educational services in California which include:

- * The St. Nicholas Project
- * Walk Out of Poverty
- * Infusion Method Workshops for teachers
- * "Training for Transformation" Workshops for adults
- * School and parish consulting for the implementation of the Bishops' Pastoral: "Sharing Catholic Social Teaching: Challenges and Directions" (June, 1998)
- * Lending library for resources of peace and social justice

Feel free to contact the Education Coordinator at Concern America for more information on any of these projects.

We hope you join us for Concern America's Next WALK OUT OF POVERTY, April 8, 2006! Call Rose Mary at Concern America to get information, walk packets, posters, flyers, and/or to schedule a presentation for your group. The Walk provides education for the participants and a sense of solidarity with our brothers and sisters around the world, while raising money for Concern America's development work in Latin America and Africa.

2005-2015 is the International Decade on Water for Life. The United Nations General Assembly, in December 2003, proclaimed the years 2005 to 2015 as the International Decade for Action 'Water for Life'. The primary goal of the 'Water for Life' Decade is to reduce by half the proportion of people without access to safe drinking water, to stop unsustainable exploitation of water resources, and to halve the proportion of people who do not have access to basic sanitation. For more information visit www.un.org/waterforlifedecade.