

# “Gulp!” EarthWorks Drinking Water Demonstration

from Experiencia 2006, Waterworks p. 7

This demonstration illustrates the actual amount of the earth’s water that is available for drinking (less than 1% of the total amount of water on the earth’s surface.) In this activity, students will identify the different forms of water found on the earth as well as compare the amount of total verses usable water on the planet. Student will also begin to understand why water conservation is important and how they can conserve water at home.

Materials:

- empty milk jug – gallon size
- eye dropper
- small clear containers – 1 cup size (3)
- tablespoon
- measuring cup
- world map and/or globe
- tap water

Teacher preparation notes:

Pre-label an empty milk jug with TOTAL WATER OF THE EARTH and pre-label each of the 3 small cup-size clear containers: TOTAL FRESH WATER, TOTAL LIQUID WATER, and USABLE WATER.

Demonstration:

1. Begin with the following demonstration for the entire class. However, allow students an opportunity to participate in the demonstration in some way.
  - a. Fill the empty milk jug labeled “TOTAL WATER OF THE EARTH” with 1 gallon of water. *The empty milk jug represents all the water on the face of the earth. Discuss the possible locations of all the earth’s water...salt water oceans and seas; frozen polar ice caps and glaciers; fresh water lakes and rivers; marshes and estuaries; groundwater and atmospheric water vapor. Use the world map and/or globe to see land mass, ocean and polar ice cap distributions.*
  - b. Remove ¼ cup from the jug. Pour the water into the small container labeled “TOTAL FRESH WATER.” *This first small container represents the earth’s supply of fresh water. The water left in the jug is all salt water from oceans and seas. We cannot drink it. Fresh water is found on land. Discuss the possible locations of land water...lakes, ponds, rivers, streams, groundwater, etc. Duse the world map and/or globe to see land verses ocean distribution.*
  - c. Take away 4 tablespoons of the fresh water. Pour each spoonful into the small container labeled “TOTAL LIQUID WATER.” *This second small container represents the liquid water*

*that is available to us. The water left in the cup is frozen in glaciers and ice caps or is in the earth's atmosphere. We do not have access to this water, either.*

- Did you know? 80% of the earth's water is surface water. The other 20% is either ground water or atmospheric water vapor.
- Over 90% of the world's supply of fresh water is located in Antarctica.

- d. Using the eye dropper, remove one drop of water from the "TOTAL LIQUID WATER." Drop one drop into the third small container labeled "USEABLE WATER." *This third small container represents what's left for us to use because a lot of our water is either polluted or too hard to get. Discuss the value of water conservation and anti-pollution efforts when so little water is truly available for our use.*

2. Discuss these water facts:

- a. On average, each of us uses about 70 gallons of water every day...70 milk jugs of water every day! Americans generally use more water than Europeans, who use 50 or so gallons of water per day. In pioneer days, people used only 5 gallons of water per day. As you can see below, most water waste occurs in the bathroom.

b. Water facts:

- One toilet flush uses 5 gallons of water.
- A ten-minute shower uses 100 gallons of water.
- A ½ full bathtub takes 50 gallons of water.
- Brushing teeth takes 2 gallons of water.
- The dishwasher uses 10 gallons of water.
- The clothes washer uses 50 gallons of water.

3. Each student needs to feel that he/she can make a difference. Water conservation is one way that a child can truly affect change at home. Challenge each child to develop a water conservation plan with their family. Use *Gulp! Water Awareness* and *My Water Conservation Plan* student sheets as a means to increase water awareness and involve the entire family in water conservation efforts.

## “Gulp!” Water Awareness

from Experiencia 2007, Waterworks p. 16

Dear Family,

I’ve just learned that water makes the earth work. Let me tell you why water is so important to conserve.

Did you know?

Water facts:

- One toilet flush uses 5 gallons of water.
- A ten-minute shower uses 100 gallons of water.
- A ½ full bathtub takes 50 gallons of water.
- Brushing teeth takes 2 gallons of water.
- The dishwasher uses 10 gallons of water.
- The clothes washer uses 50 gallons of water.

Help me do my part to save water at home by working with me to develop “My Water Conservation Plan.”

Environmentally yours,

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Student signature

# My Water Conservation Plan

from Experiencia 2007, Waterworks p. 17

*I want to use less water in my home!*

I have noticed that my family uses too much water in these ways:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

*I can make a difference!*

I will help my family use less water at home by:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

*I think by taking this action that I can save:*

\_\_\_\_\_ gallons of water in a day (use the water facts to determine this amount)

\_\_\_\_\_ gallons of water in a week (multiply your daily amount by 7)

\_\_\_\_\_ gallons of water in a month (multiply your daily amount by 30)

*I will always try to conserve water!*

Signature: \_\_\_\_\_