



# EarthCircles

## Water at Work

### LESSON 1: WATER, WATER EVERYWHERE!

#### OVERVIEW

**Concept:** Wherever people live, they need a system for getting fresh water to their homes. Water supplies are limited for much of the world's population.

#### **Lesson At A Glance:**

Materials

Preparation

Background

#### LESSON PLAN

Opening Circle

Activity: Kids calculate how much water their families need per day. Then they set up a water brigade to carry water from a source to a destination and calculate how many trips it would take to carry one day's supply of water home.

Discussion

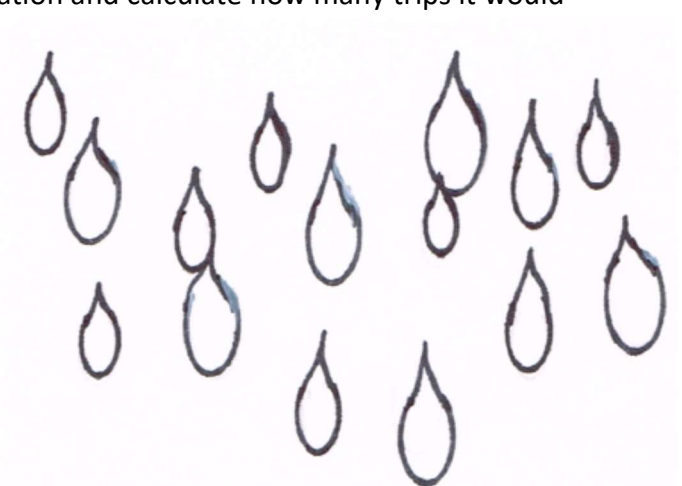
Principles in Practice

Story

Closing Circle

#### **Materials:**

- Water buckets or other carrying tools such as gallon jugs; one for each Kid.
- Water
- Strong poles (such as broomsticks), one for each team of two Kids
- 2 ft. long strips of cloth or twine for each team of two Kids
- Outdoor area with some distance
- Stop watch or clock with a second hand (cell phone optional)
- Poster of UU Principles (Kids version)



**Book:** *One Well: The Story of Water on Earth* by Rochelle Strauss

### Preparation:

- Put up the Principles poster where Kids can see it from their seats.
- List water-use figures in the background information on the chalkboard for all to see.
- Each Kid will need a gallon jug/bucket filled with water (or bucket filled with bricks or stones in it to represent water).
- Contact Heifer International, local library or check Amazon.com well in advance to secure the book One Well: The Story of Water on Earth by Rochelle Strauss.
- Arrange the circle of chairs for the opening discussion.
- <http://www.youtube.com/watch?v=qfeg-pjK9kU> to view video clip.

### Background for Teachers:

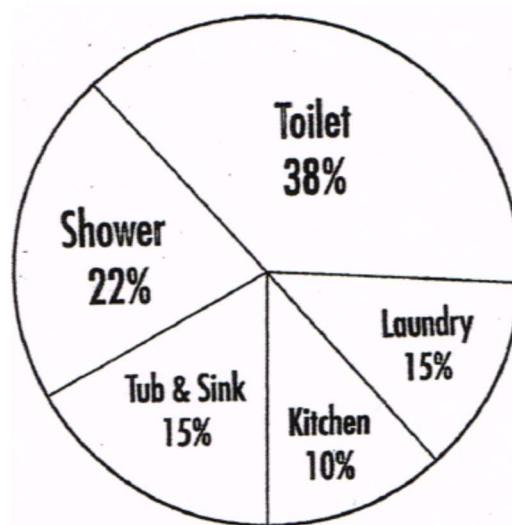
Water is essential to sustain life, but access to water is difficult in many parts of the world.

Fresh water is available from only two sources:

- **Runoff** from rain and snowmelt that collects as surface water in rivers and lakes.
- **Groundwater** that collects below the surface when rain or snowmelt seep into the ground.

Water needs:

- An adult needs about 2 ½ quarts of water per day simply to survive.
- On average, a person in a modern community uses about 65 gallons of water per day.
- A family of four would need about 260 gallons per day.
- This includes community water needs for business, industry, and public buildings such as schools.



Wherever people live, they need to get clean water from where it collects to where they can use it. In underdeveloped countries, this means carrying a daily water supply from a spring or stream to the family dwelling, usually a task for women and children. The days when our own ancestors carried water into their houses in buckets are not long gone by. Indoor plumbing that delivered the water in pipes became available in urban America only in the late 19th century.

In an advanced society a water supply system collects large amounts of water in a **reservoir** and distributes it to customers throughout the region. In a larger population area, a dam to block a river and create a reservoir may be needed to insure an adequate water supply. People also access **groundwater**, using **wells** to reach down into an **aquifer** and pump water to the surface.

In rural areas and underdeveloped countries people may have wells, or they may take water from nearby streams or ponds. In arid regions where water is scarce, the daily water supply may have to be carried long distances from a source to home. Women and children usually have this task.

<b>Water Needs to Produce Things:</b>	
<b>Product</b>	<b>Water required</b>
A car	119,000 gal. (450,000 liters)
A ton of paper	14,300 gal. (54,000 liters)
A bag of cement	48 gal. (180 liters)
A bicycle	34 gal. (130 liters)
A pair of shoes	14 gal. (53 liters)
A Sunday newspaper	5 gal. (20 liters)
A bar of chocolate	1 quart (1 liter)
Source: McLeish, Ewan, <i>Keeping Water Clean</i> , Raintree, Austin, TX, 1998.	

The book, *One Well: The Story of Water on Earth* by Rochelle Strauss, is an excellent source for interesting facts and water history. *The Drop in My Drink: The Story of Water on Our Planet* by Meredith Hooper tells about where water came from and why it matters, with paintings that dramatize Earth's history.

## **LESSON PLAN**

### **Opening Circle:**

With everyone seated in the circle, exchange greetings and note who is present. Ask the Kids to look at the poster of UU Principles. Which ones relate to caring for the world around us and the people in it? Which ones might they practice in class today? Help the Kids apply these Principles to their classroom covenant or help them to create a covenant if they have not done so already.

### **Discussion:**

Tell the Kids that today's topic is water.

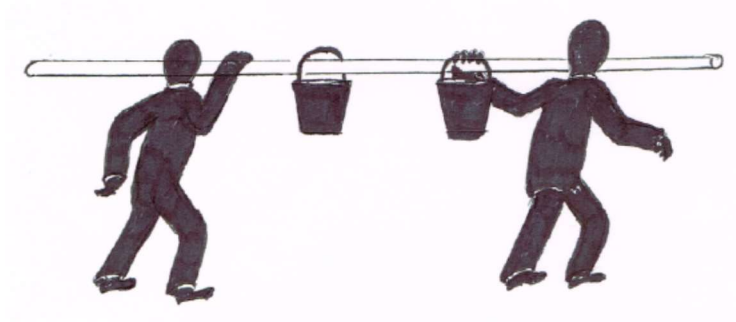
- How much do they think they use in a day?
- How much do we really need?
- How do people get their water supply? Here where we live? In developing countries?

Ask if the Kids know where their water supply comes from. If their answer is "the faucet," ask how does the water get to the faucet? How do they think people living in undeveloped countries get a water supply? Use background information to help Kids recognize differences in water use between towns and cities where they live and villages in remote areas and in developing countries.

### **Activities:**

**Outside:** Have Kids imagine that they live in an area with one central water supply located two miles from where they live. In most villages women and children are responsible for carrying water a comparable distance for their family's needs.

Set the Kids up in teams of two. Each team needs to carry two gallons of water around one block once, trying not to spill. If they want, they can devise different ways of carrying the containers of water with poles and twine. On average, going around four blocks adds up to one mile, so Kids may circle a block once or twice, carrying "their family's" water supply.



**Inside option:** Have each Kid lift and carry one or two full water containers around the room several times.

- How hard was it?
- What could the Kids do with this much water at home?
- How long would it last on a typical day?
- How long or far do the Kids think they could carry this much water?

**Discussion:**

When they return, as a group Kids estimate how long it would take them to carry 65 gallons per day to their homes 2 miles away. What if they had to bring 65 gallons per day home?

**Story:** Share information about water use in our communities from background information and from the book, *One Well: The Story of Water on Earth* by Rochelle Strauss.

**Principles in Practice:**

What if the Kids had to bring water home to their families this way?

- How would it change how they use water?
- What changes would they have to make to use so much less water?
- How much time would they have to spend carrying water to meet their family's needs?
- What would the Kids have to give up in their lives daily to make time to carry water?

**Closing Circle:**

Ask the Kids to repeat these closing words together:

“Water flows from high in the mountains.  
Water runs deep in the Earth  
Miraculously, water comes to us,  
And sustains all life.”

Thich Nhat Hanh, *Earth Prayers*, Harper, San Francisco, 1991

