



## **Easy Street**

*(an activity from Project WET)*

Grade Level: Middle School

Subject Areas: Mathematics, Language Arts, History, Environmental Science

Duration: Preparation Time: Part I: 15 minutes; Part II: 15 minutes

Activity Time: Part I: 50 minutes; Part II: 30 minutes

### **Objectives:**

Students will:

- Compare and contrast contemporary and historical water uses.
- Identify water conservation strategies.

### **Materials**

- Copies of Drought Days Simulation
- Copies of Water Use Calculations Worksheet
- Calculators
- Copies of Cool Clear Water and The Bath

### **Making Connections**

People often use water without thinking about the implications. Comparing present access to water to that of the late 1800s, helps students appreciate how convenience can lead to increased use of a resource.

### **Background**

Too often, we take water for granted. It easily flows from taps, spurts from the ends of garden hoses, flushes down toilets. Because water is convenient, it is also easy to think of water as plentiful, almost limitless.

This was not always so. In North America less than 100 years ago, many people had to pump and haul their own water for washing, cooking, bathing, and other needs. A dependable well or spring was a critical factor in choosing a homesite, and an inadequate supply of water caused daily hardship. In many parts of the world, including some regions of North America, hauling water remains a common practice.

Imagine how differently we would feel about water if we had to pump and carry it by hand. Imagine, also, the effects of drought or pollution on the life-giving supply we too-easily think of as infinite.

### **Procedure**

#### **Warm Up**



Ask students to guess how much water their families use every day. Have them gather and compare estimates from individual family members. If necessary, review math skills needed to complete the Water Use Calculations Worksheet.

### **The Activity**

#### **Part I**

1. Ask students to work through the Drought Days Simulations, starting with the present day, then moving to the 1890 family, and record their computations on the Water Use Calculations Worksheet.
2. Discuss results. Do students think the average household in 1890 would consume 200 gallons (760 liters) of water per day (not including water for livestock), as many households do today? Ask students to list several reasons why they would or would not.

#### **Part II**

1. Give the class time to read the short selections, Cool Clear Water and The Bath.
2. Discuss the following questions:
  - a. Why do students think homesteaders recycled so much of their water?
  - b. How would students feel if they had to haul water to their house every day instead of simply turning on a tap?
  - c. Do students know that in some places in the world people still have to carry water to their homes?
  - d. What lifestyle impact do students think hauling water has on people who live in less-developed parts of the world?
  - e. Do students think they would alter the amount of water they use every day if they had to haul it themselves?

### **Wrap Up and Action**

Ask students to estimate again how much water their families use per day and compare with their original guesses. Have the class brainstorm conversation ideas. Encourage students to discuss water conservation at home. Have them talk with grandparents or other older relatives about times when they had to haul water or do without indoor plumbing.

### **Assessment**

Have students:

- Compare and contrast water use habits from the 1890s and the present (Part I, steps 1 and 2).
- Provide reasons why a modern family might use more water than one in the 1890s (Part I step 2).
- Analyze a story about water use in the past to evaluate their own use of water (Part II step 2).
- Develop strategies for water conservation (Wrap Up).



### **Extensions**

Calculate what students' monthly water bills would be without any conservation measures, then figure the savings after changes are instituted (using their figures from the calculations worksheet).

Ask students to get a copy of their families' last water bill, then institute several water conservation measures with the help of their parents. See if these changes are reflected in the next bill.

Have students research their family histories to determine when their ancestors stopped hauling water and installed indoor running water.

Visit a local retirement home to interview residents about their water use experiences before modern plumbing. Students can tape their interviews.

Bring in a local expert from the water commission or city water board to discuss local and regional water use problems.

### **Resources:**

Cramer, Marian. 1984. *Lantern Glow*. Contact: Marian Cramer, RR1, Box 147, Bryant, SD 57221.

Kesselheim, Alan S., and The Watercourse and National Project WET staff. 1993. *The Liquid Treasure Water History Trunk: Learning From the Past*. Bozeman, Mont: The Watercourse.

Wilder, Laura Ingalls. 1935. *Little House on the Prairie* (and other books). New York, N.Y.: Harper & Row.



## IT TAKES AN IOWAN

### Cool Clear Water

Kerwhump-squeack, kerwhump-squeak. The cold water gushed from the pump. Was any drink ever as sweet as that you caught in an improvised hand-cup dipper and sucked up noisily?

Towering above the well was the windmill, sentinel of the prairie. Kicked into gear she whipped her AEROMOTOR or DEMPSTER tail away from the wind and pushed her wheel to catch the breeze. With a clank of gears the pump-stick began its up and down rhythm lifting cool water from the depths of earth, sending it splashing into the wooden stock-tank or waiting buckets.

It took very little wind to operate the mill. Ten to fifteen miles an hour would keep things going nicely.

The well was the hub of the farm. If possible the barn was located nearby. This was best for labor if not hygienic reasons. All livestock had a mighty thirst.

Children of the bygone era were, as now, loved for themselves but they filled a real need in the family unit. A child was measured, not only on the kitchen door where heights were carefully charted, but in the chores they were able to accomplish. A child could take pride in and know he was really growing up and amounting to something when he could help with the watering.

It began with a small bucket dipped full from the tank and lugged drippingly beside Dad who swung along with two five-gallon pails hanging light as feathers from his powerful fingers. Gradually you progressed to a twelve-quart

galvanized pail that only had to be set down a couple of times as you watered the chickens. That nice pail-full of water offered many youngsters their first practical lesson in physics. How fast must you windmill your arm, swinging the pail in a complete circle to prevent any water from spilling? No one mentioned centrifugal force; it was called "Spin the Pail." You knew you had arrived the day Dad said, "Use the five-gallon pail beside the barn and water the pigs, I'll feed the calves."

It was a feeling of sheer power to stand by the fence, alone, pouring water into the hog trough as the squealing porkers fought noisily for a drink. The livestock, your family needed you! The importance wore a bit thin as you made possibly ten trips. It was an incentive to keep trying to haul two pails at one time and cut the trips to five.

If the well and water tank were in the best possible position it might be possible to arrange fences so that at least two yards had access to it.

The water tank, because of its importance and danger, had unofficial set of rules for children. For toddlers..."stay away from the tank. You may fall in and drown."

For middle sized children..."Yes, you may sail stick boats on it but take them out when you are done and DON'T stir up the water. The horses will be in from the field at noon and need a good, fresh drink.

If by chance a few days of calm descended on the farm the hand pump would be pressed into service. Farm boys with an inclination for arithmetic could tell how many strokes it took to fill the tank.

The logo features the text "IT TAKES AN IOWAN" in a bold, white, sans-serif font. "IT TAKES AN" is on the top line, and "IOWAN" is on the bottom line. The text is centered within a white banner that has a slight 3D effect. Above the banner is a small globe icon. The entire logo is set against a blue background with a pattern of faint, white icons representing various aspects of agriculture and technology.

## IT TAKES AN IOWAN

Farm children were and are notorious dreamers of big dreams. Pumping water was a chore that required almost no concentration and visions of wonder flashed through active minds as they pumped away. Not one of the most accomplished, wildest dreamers envisioned a farm where water fountains supplied every pen and barn with an automatic supply of water, warmed and kept from freezing in cold weather; center-pivot irrigation units watering a quarter-section of land; or rural water systems with mains crossing the countryside bringing water to every farm. If such notions had been proposed to a B.E. (Before Electricity) farm kid he would surely have laughed and answered..."Ya, come with me; I'll race you to the food of the rainbow." – Marian Cramer, *Lantern Glow*.



## IT TAKES AN IOWAN

### The Bath

Ma took down the wash-boiler from the back porch wall about three o'clock on Saturday afternoon and summoned her chief water-hauler, a boy about ten years old. He must fetch four pails of water for the boiler.

Though washday was past or coming whichever way you looked at it, this was Saturday-the night of the bath.

Ma and the girls would start things off with a head-wash every second week. Since their hair was long it was nice to do that in the afternoon as it would be completely dry by bedtime.

After supper the boiler steamed away on the stove. In winter the steam that collected on the windowpane quickly froze to think, white frost but near the stove it was cozy.

Some families had tin bath tubs you could soak in. Some used the round rinse-tub from washday in which you stood and scrubbed; some used a wash basin. It was sort of a matter of tradition and using what you had.

The kitchen was hot with the stove really fired up. Ma brought out a big hooked rug and put it right in front of the open oven door. The turns usually went from the youngest to the oldest ending with Pa. Sometimes a boy or girl of courting age might have Saturday night plans and they could be worked in the early part of the schedule. During summer when the whole family went to town on Saturday night the bath hour was moved up so the baths came before town.

In winter Ma laid out neat piles of clean underwear and night clothes for each member of the family. With a pail of cold water at hand to blend with the hot water it was bath time.

Ma presided over scrubbing the small children until they were considered old enough to manage themselves and then they could bathe alone and be checked afterwards.

Privacy was honored. No one interfered as one by one the family members took their turn enjoying the nice hot water. It usually wasn't emptied between bathers, but more water could be added to keep it nice and warm.

Homemade soap was used for scrubbing, but sometimes there was a bar of town-soap with its good smell.

There would be at least three bath towels for family use. These would be nice, soft, terry cloth, not the hard huck toweling used for every day. As one towel got wet it could be draped over the oven door to dry and later used again.

Ma had likely cut and hemmed the wash rag from a bath towel gone thin in the middle.

There might be a bottle of lotion se on the table to smooth on elbows and rough heels.

Pa, the last one in the bath, took care of emptying the water into slop pails. He would wipe out the tub and hang it on the back-porch wall by the boiler.

Ma would come in quietly wearing her night clothes with her hair braided into one big braid down her back. She picked up the piles of discarded clothes for her washbox and tidied up the kitchen for tomorrow was Sunday.

Sunday could come. Her family was all clean for another week. – Marian Cramer, *Lantern Glow*



Drought Days Simulation

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1890 Family

This scenario is based on a homesteading household in the American West. You are a family of eight persons: two adults and six children (a 9-month-old boy, a 3-year-old girl, a 6-year-old boy, an 8-year-old boy, a 10-year-old girl, and a 15-year-old girl). You live in a wooden house with three rooms.

You get your water from a well located near the barn, 150 feet from your house. Your dad recently dug a pit for an outhouse. Your family has five horses (consuming 12 gallons of water per horse per day), two hogs (3 gallons per hog per day) and four cows (12 gallons per cow per day). Also, you rely on a garden for most of your family’s vegetables.

Problem 1: You have noticed that the well is unable to meet your family’s water needs during prolonged periods of hot and dry weather. If dry weather conditions persist, you will have to decrease your water consumption or take some other action.

On the Water Use Calculations Worksheet, list the ways your family uses water. Remember, there was no running water or electricity in 1890. In addition, water was often recycled for several purposes. For example, bath and dish tub rinse water were used to water the garden.

Gallons of Water Consumed by Common Uses- before running water	
Toilet (outhouse)	0
Wash basin	1
Washing dishes by hand	2
Drinking water (see present day)	
Washing clothes by hand	5
Watering the garden	10-20
Bathtub	30

Problem 2: How much water do you think your family of eight would consume in one day?

How much of this total would be consumed by livestock?

Why do you think the well was dug closer to the barn than to the house?

If the family had to decrease water consumption, how would they do it? List your ideas on the worksheet.





Drought Days Simulation

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**The Present**

Think of your family and its water use. Typically, a person uses about 50 to 100 gallons of water every day. Using that figure as a guide and referring to the chart, Gallons of Water Consumed by Common Uses, calculate how much water your household requires daily.

Consider the following two problems and perform calculations:

**Problem 1:** The area in which you live is beginning to experience a water shortage because of persistent hot, dry weather. Your water department has requested that each household voluntarily reduce water consumption by 20 percent. Decide how you will deal with the request. List the ways your family commonly uses water and determine quantities. Identify five changes you can make in your water use habits. Record your computations on the Water Use Calculations Worksheet.

**Problem 2:** Two weeks have passed. Hot and dry conditions continue to plague your area. The water department has asked each household to decrease water consumption another 20 percent. On the Water Use Calculations Worksheet, list an additional five changes you can make and figure the result.

Brushing teeth (water running)	
Drinking water 1 qt/50 lbs.	
Flushing toilet	5-7
Dishwasher	10
Shaving(water running)	20
Washing dishes by hand	30
Bath	35
Ten-minute shower	25-50
Washing machine large load	60
Watering lawn	75
Washing car (hose running)	180

Water use	Gals.	1st change	Saved	2 <sup>nd</sup> change	Saved
Total Use					