

Alice in Waterland

Study Units

[Iowa's Waters; People, Land, and Water](#)

Supplemental Information

In Iowa, many of our industries are “wet” meaning they use very large amounts of water. Some include meat packaging and processing; fertilizer and pesticide production; wet grain milling; and rendering.

Teaching Suggestions

Follow the guide, but include the following modifications: Give students the **Aquatic Trivia** sheet as a source of information on water usage and / or check out the Environmental Protection Agency's (EPA) [Water Sense](#) site, or the US Geological Survey's (USGS) [Water Science School](#) for more information about water use. Have students keep track of their own water usage for five days using the **Water Use Chart**. After the first five days, have students fill out the **Water Conservation Contract** and have them **and their parent / guardian** sign it. Have students keep track of their water usage for another five days.

Discuss and compliment any who decreased their water consumption. (Total the savings of the entire class for the five-day period and multiply this number by 73 to find out how much water the class could save in one year if all students keep their contracts.) *Older students:* extend the activity by contacting local factories and businesses to find out how much water they use in the course of their operations. Invite the person in charge of your water purification and / or treatment plants to visit your classroom if you are unable to take a field trip to the facilities.

Evaluation

See the **student worksheet**.

Student Materials

- **Aquatic Trivia**
- **Water Use Chart**
- **Student Worksheet**
- **Water Conservation Contract**

Answers to student worksheet: 1) 160, industry 2) 75,125; other answers will vary

Teacher Aids

None

Additional Materials

None



Aquatic Trivia

Water is necessary for almost everything we do! The average American family uses 300 gallons of water per day. Following are some interesting facts about how we use water

- ❖ Each person drinks 1 1/2 quarts of water per day
- ❖ It takes 39,090 gallons of water to make a car
- ❖ It takes 1,800 gallons of water to produce enough cotton to make a pair of jeans.
- ❖ 4.3 trillion gallons of rain (snow) falls on the United States every day
- ❖ It takes about 62,000 gallons of water to make one ton of steel.
- ❖ About 1.85 gallons of water are needed to make the plastic for a bottle of water.
- ❖ About 100 gallons of water are used by/for each person for domestic uses (in homes) in the United States each day
- ❖ In 2010, about 355 billion gallons of water was used each day in the U.S.

Below are some approximate amounts of water used in daily activities.

Activity	Amount of water used
Flushing a toilet	1.5-5 Gal.
Shaving with water running	2 Gal.
Shower	5 Gal. /Min.
Tub bath	30-40 Gal.
Cooking 3 meals	8 Gal.
Cleaning house	8 Gal.
Washing dishes for 3 meals	10 Gal.
Washing clothes (1 Load)	20-40 Gal.
Watering a lawn	30-40 Gal.
Washing a car with a hose	30-40 Gal.



Alice in Waterland: Water Use Chart

Directions: Each time you do an activity that uses water record it in the appropriate box. At the end of each day, total the amount of water you use. Note: Even if you do not wash dishes or cook, write down the amounts of water needed to do these because the water was used for you!

Activity	Day 1		Day 2		Day 3		Day 4		Day 5	
	# Times	# Gallons								
Shower										
Bath										
Flushing toilet										
Washing clothes										
Cleaning house										
Cooking										
Washing Dishes										
Washing Car										
Watering Lawn										
Other										
Total Use (gal.)										



Alice in Waterland: Student Worksheet

FILL IN THE BLANK

Use the **Aquatic Trivia** sheet and information you collected about your own water use to complete the following.

1. _____ gallons of water are used by / for each person in the United States in their homes every day. Most of the water used in the U.S. is used by (individuals, industry, agriculture).

2. If you take a 15 minute shower you use about _____ gallons of water.
If you reduce the time of your shower to 10 minutes, how much water would you save in five days?
_____ gallons

3. What did you do that used the most water?

4. How much did you reduce your water usage after you signed the **Water Conservation Contract**?

5. List two ways human use of water may reduce its quality.

6. List three ways human use of water might affect animals living near or in water.

7. List two actions you can take to protect water quality in your area.



Alice in Waterland: Water Conservation Contract

Water Conservation Contract

I, _____ do solemnly pledge to conserve water by:

Starting this _____ day of _____, _____.

Signature

I, _____ have read this contract and certify that I will work with my child, _____, to keep it.

Signature

