

Are YOU A Water Waster?

Goal

- ❖ Recognize that solutions to water problems require taking responsibility for personal use of water.

Voluntary State Curriculum

1.0 Skill and Processes

- A Scientific Inquiry: 1
- C Application of Science: 2

6.0 Environmental Science

- C Natural Resources & Human Needs: 1

Time 45 minutes

Materials

- ✓ Water Use Activity (1 deck for every 2-5 students)
- ✓ Water You're Using Data Sheet

Motivation

- ❖ Self-use survey
- ❖ Read "Are You a Water-Waster?"

Procedure

- 1) Have students complete the "Water You're Using: Self Use Survey" (estimated) to point out the amount of water used by individuals and families. Have students circle the letters of the type of water use that they think they could reduce.
- 2) Let the students play the Water Use Activity to learn of possible solutions to waste problems. Prepare Activity ahead of time. Make one copy of the master for each deck needed. Laminate cards, if



possible, then cut them apart. Following the Activity, discuss each set of problem areas and solutions used in the Water Use Activity.

- 3) Using the Self Use Survey (calculated), have students time and record their water use for the day. Using the information learned from the Activity, have students develop a plan of action that is practical and attainable. EX: Take a 10-minute shower instead of 25 minutes. Have students do the Self Use Survey (calculated) again about a week after they develop their plan. This is more of a reminder than a true test of conservation.

Wrap Up

- ❖ Do we really have to save our water? Or do we have plenty?
- ❖ Why do you think people waste so much water?
- ❖ What happens when sewage treatment plants can't handle the amount of water to be treated? (Relate that excess wastewater can result in pollution in our streams.)

Modifications

- ❖ Play in pairs, groups.

Assessment

- ❖ Participation

Optional Challenges/Extensions

- ❖ Set up a water conservation plan for the group. Example: Do not run water while lathering your hands at the sink.
- ❖ Study a country that lives in drought conditions and their methods of water use and conservation.
- ❖ Do a home-use survey checking for leaks and obvious water waste. How many homes have to pay water and sewage fees? How can they reduce their use and save money?
- ❖ Create your own problem, solution and Water Wonders question cards.
- ❖ Have students complete the worksheet entitled, "Water Shortage" as a follow-up. It provides a way for students to experience directly what severe water shortage means for everyday activities. Ask students to make a commitment to do the activity at home. Discuss the results at your next class.
- ❖ Project Wet Activities: Water Meter, Money Down the drain, Long Haul
- ❖ Journal

Are YOU a Water Waster?

Have you ever seen the science fiction movie “Dune” ? The people in “Dune” lived on a planet with almost no water. They invented amazing ways to conserve water to stay alive.

Most of us live in places where we have no shortage of water. We tend to think that we can use all the water we want – even waste it - and there is no harm done. This is a mistake. There are limits to the amount of safe water available. In the past, certain areas of Maryland have put restrictions on water use in residential areas. You may remember times in summer droughts when you were not permitted to wash your car or water your lawn.

Using more water than you need also adds to the pollution of our streams and rivers. Too much water in sewage systems can lead to leakage.

There are many ways to stop being a Water Waster. Take short showers. Put a water saver in your toilet flush box (it’s possible to make your own by filling a milk bottle with water or using a brick). Make sure leaky faucets are fixed fast. Don’t let the water run while you brush your teeth. What are other ways you can conserve water?



Water You’re Using

WHAT YOU WILL NEED

- Water Use Activity and Activity Sheets

WHAT TO DO

Your teacher has instructions for the activity. Play the activity and see who wins and how. Fill out your own water use form. Talk about ways you can stop being a water waster. Decide on actions you will take at home.

AT HOME...

Share what you learned about being a water waster with your family. See if they’ll agree to join you in changing some ways you do things in order to waste less water.

Student Page

Water You're Using



Self-Use Survey (estimated)

Gallons

- ❖ Number of times you flush the toilet per day _____ x 5 gal = _____
- ❖ Minutes faucet runs while washing & brushing teeth _____ x 3 gal = _____
- ❖ Length of your shower, in minutes _____ x 5 gal = _____
- ❖ Water to wash your dishes, in minutes _____ x 4 gal = _____
- ❖ Water to wash a load of clothes, in minutes _____ x 10 gal = _____

Add up the gallons column to determine the average amount of water you use per day. _____

Multiply your average by the number of people in your house to determine the average amount for your family _____

Self-Use Survey (Calculated)

	Normal	Reduced
Actual flushes per day		
Actual minutes washing and brushing		
Actual minutes in the shower		

PLAN OF ACTION

I will reduce water waste by:

1. _____
2. _____
3. _____



Student Page

Water Shortage

An Activity to Do at Home

1. Did you run out of water before the day was over? ____
2. Did you have any water left? ____ If so measure how much. _____
3. What did you learn about your water use habits?

4. What were some “tricks” you learned for conserving water?

5. What was the hardest thing about your “water shortage” day?

6. What can you do every day to conserve water at home and at school?

Water Wonders

Activity 13: Water Use

The Rules

The object of the activity is to get one problem area card and four solution cards that fit the problem. Five cards are dealt to each player. The remaining cards become the “Faucet” pile. Turn over the top card to create a “Drain” or discard file.



Shuffle the “Water Wonder” cards and place in a separate pile, with the question side up.

Upon his turn, a player must draw a card from the “Faucet” pile and discard an unwanted card, face up, in the “Drain” pile. When the “Faucet” is empty, recycle the “Drain” pile.

The player may pick up the top card on the “Drain” pile if he/she needs that particular card.

Special Cards:

“Fix Leaks” cards are a solution wild card that can help any problem.

If a player draws a card that says “Water Wonders”, they must answer the question found on the top card of the “Water Wonders” pile. If the question is answered correctly, that player chooses another player and asks for a card that he needs. The other player must give up that card in exchange for a card of player #1’s choice. Player #1 then discards the “Water Wonders” card to the top of the “Drain” pile and returns the question card to the bottom of the “Water Wonders” pile.

If the question is answered incorrectly, the player does not draw another card – in effect, he/she loses a turn this go round. He discards the “Water Wonders” card to the top of the “Drain” pile and returns the question card to the bottom of the “Water Wonders” pile.

Solution Cards Needed to Solve Problems:

Bathroom Sink Blues: 1, 2, 3, 4, 9, 10, and 11

Toilet Turmoil: 5, 6, 7, and 8

Bumblng Baths: 4, 9, 10, 11, and 12

Kitchen Sink Kinks: 4, 9, 13, 14, 15, and 16

Outdoor Dilemma: 17, 18, 19, and 20

WATER WONDER CARDS – QUESTIONS

<p>Question: A 10 minute shower uses how many gallons of water?</p> <p style="text-align: center;">Water Wonders Card #1</p>	<p>Question: Which usually uses less water:</p> <p style="text-align: center;">A shower? or A bath?</p> <p style="text-align: center;">Water Wonders Card # 2</p>	<p>Question: A slow steady drip can waste how many gallons of water per month?</p> <p style="text-align: center;">80 gallons 200 gallons 350 gallons</p> <p style="text-align: center;">Water Wonders Card # 3</p>	<p>Question: The best time to water your lawn is noon time:</p> <p style="text-align: center;">True or False</p> <p style="text-align: center;">Water Wonders Card # 4</p>	<p>Question: Lots of suds are better.</p> <p style="text-align: center;">True or False</p> <p style="text-align: center;">Water Wonders Card # 5</p>
<p>Question: How much water on the earth is fresh water?</p> <p style="text-align: center;">3% 20% 40%</p> <p style="text-align: center;">Water Wonders Card #6</p>	<p>Question: Hot water costs more to use than cold water.</p> <p style="text-align: center;">True or False</p> <p style="text-align: center;">Water Wonders Card # 7</p>	<p>Question: It is better to wash a few dishes by hand than to use the dishwasher.</p> <p style="text-align: center;">True or False</p> <p style="text-align: center;">Water Wonders Card # 8</p>	<p>Question: The average amount of water a person uses per day on the east coast is:</p> <p style="text-align: center;">50 gallons 100 gallons 150 gallons</p> <p style="text-align: center;">Water Wonders Card # 9</p>	<p>Question: Keeping your grass cut short (1”) requires less watering.</p> <p style="text-align: center;">True or False</p> <p style="text-align: center;">Water Wonders Card # 10</p>

Photocopy these cards back to back with “Water Wonder Cards - Answers

WATER WONDER CARDS – ANSWERS

<p>Answer: False</p> <p>Requires more rinsing which uses more water.</p> <p>Water Wonders Card #5</p>	<p>Answer: False</p> <p>Early morning or late evening.</p> <p>Water Wonders Card # 4</p>	<p>Answer: 350 gallons</p> <p>Water Wonders Card # 3</p>	<p>Answer: A shower</p> <p>Water Wonders Card # 2</p>	<p>Answer: 40-70 gallons</p> <p>Water Wonders Card # 1</p>
<p>Answer: False</p> <p>It holds less moisture and therefore needs more watering.</p> <p>Water Wonders Card #10</p>	<p>Answer: 100 gallons</p> <p>Water Wonders Card # 9</p>	<p>Answer: True</p> <p>Water Wonders Card # 8</p>	<p>Answer: True</p> <p>Water Wonders Card # 7</p>	<p>Answer: 3%</p> <p>Water Wonders Card # 6</p>

Photocopy these cards back to back with “Water Wonder Cards – Questions”

SOLUTION CARDS – PAGE 1 OF 2

<p><i>Turn off water when brushing teeth and washing face.</i></p>  <p>Card #1</p>	<p><i>Use a cup for brushing your teeth.</i></p>  <p>Card # 2</p>	<p><i>Fill the sink only half full when saving.</i></p>  <p>Card # 3</p>	<p><i>Change the faucet or showerhead to a water saving model.</i></p>  <p>Card # 4</p>	<p><i>Keep toilet in good repair so it doesn't stick.</i></p>  <p>Card # 5</p>
<p><i>Reduce water in the toilet tank. Use plastic bottles or toilet dams.</i></p>  <p>Card #6</p>	<p><i>Stop flushing trash, tissues or bugs!</i></p>  <p>Card # 7</p>	<p><i>Replace toilet with a water saving model.</i></p>  <p>Card # 8</p>	<p><i>Make sure stopper is tight.</i></p>  <p>Card # 9</p>	<p><i>Keep faucet in good repair. Stop drips!</i></p>  <p>Card # 10</p>

SOLUTION CARDS – PAGE 2 OF 2

<p><i>Don't spill water through the overflow pipe. Too full!</i></p>  <p>Card #11</p>	<p><i>Take a quick shower.</i></p>  <p>Card # 12</p>	<p><i>Use the largest dirty dish or pan as the sink instead of filling the sink.</i></p>  <p>Card # 13</p>	<p><i>Fill a pan with rinse water and dip dishes instead of running water.</i></p>  <p>Card # 14</p>	<p><i>Only use the dishwasher when full.</i></p>  <p>Card # 15</p>
<p><i>Use garbage disposal only when full and needed.</i></p>  <p>Card # 16</p>	<p><i>Wash the car using a bucket of water instead of a running hose.</i></p>  <p>Card # 17</p>	<p><i>Water the lawn in the evening or early morning.</i></p>  <p>Card # 18</p>	<p><i>Sweep sidewalks and driveways. Don't hose them down.</i></p>  <p>Card # 19</p>	<p><i>Don't water the street. Adjust the lawn sprinklers.</i></p>  <p>Card # 20</p>

PROBLEM AREA CARDS

 <p style="text-align: center;">BATHROOM SINK BLUES</p> <p style="text-align: center;">Solution cards: 1, 2, 3, 4, 9, 10, 11</p>	 <p style="text-align: center;">TOILET TURMOIL</p> <p style="text-align: center;">Solution cards: 5, 6, 7, 8</p>	 <p style="text-align: center;">BUBBLING BATHS</p> <p style="text-align: center;">Solution cards: 4, 9, 10, 11, 12</p>	 <p style="text-align: center;">KITCHEN SINK KINKS</p> <p style="text-align: center;">Solution cards: 4, 9, 13, 14, 15, 16</p>	 <p style="text-align: center;">OUTDOOR DILEMMA</p> <p style="text-align: center;">Solution cards: 17, 18, 19, 20</p>
 <p style="text-align: center;">BATHROOM SINK BLUES</p> <p style="text-align: center;">Solution cards: 1, 2, 3, 4, 9, 10, 11</p>	 <p style="text-align: center;">TOILET TURMOIL</p> <p style="text-align: center;">Solution cards: 5, 6, 7, 8</p>	 <p style="text-align: center;">BUBBLING BATHS</p> <p style="text-align: center;">Solution cards: 4, 9, 10, 11, 12</p>	 <p style="text-align: center;">KITCHEN SINK KINKS</p> <p style="text-align: center;">Solution cards: 4, 9, 13, 14, 15, 16</p>	 <p style="text-align: center;">OUTDOOR DILEMMA</p> <p style="text-align: center;">Solution cards: 17, 18, 19, 20</p>

WILD CARDS



**WATER
WONDERS**



**WATER
WONDERS**



**WATER
WONDERS**



**WATER
WONDERS**



**WATER
WONDERS**



**FIX
LEAKS**



**FIX
LEAKS**



**FIX
LEAKS**



**FIX
LEAKS**



**FIX
LEAKS**

