



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



# Fix a Leak Week Student Worksheet

Learn how to find leaks and save water at home during Fix a Leak Week

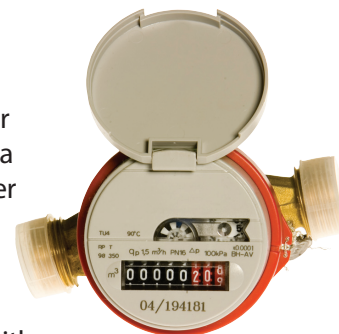
## Lesson 1: Watch the Clock (and the Meter)

What's the big deal with drips? Small leaks can add to big water waste. Try these activities and math problems to see how fast water waste adds up.

### Activity: Check Your Water Meter

Water utilities, the companies or organizations that provide running water to our homes, keep track of how much water a family uses each month or season with a water meter. Your home's water meter is a device that measures how much water flows into your house. Water meters are usually located outside, either under a metal cover on the sidewalk or in a box outside the house.

See the example of a water meter to the right. The numbers in the boxes show how much water has been used since the last reading. Meters show water use in either gallons or cubic feet (or ccf, a hundred cubic feet). 1 cubic foot of water = 7.48 gallons.



One way to discover if your home has leaks is to check your water meter before and after a two-hour period when no water is being used. Here's how: Check the meter and write down what it says. Then be careful not to flush the toilet, run the faucet, or use any water for at least two hours. At the end of two hours, check the water meter again. If the meter does not read exactly the same, you probably have a leak. Note: If your water meter is in cubic feet, the leak may not register within two hours unless it's a very large leak.

- Where is the water meter located at your house? \_\_\_\_\_
- What unit of measure does your water meter use? (Circle one)    Gallons    or    Cubic Feet

### Instructions:

1. Find the water meter for your house. Write the number and unit it says here: \_\_\_\_\_
2. Wait at least two hours. Be careful not to use any water. That means no toilet flushing, dish washing, clothes washing, hand washing, showering, bathing, or running the hose for the next two hours.
3. At the end of two hours, go back to the water meter to see if it has changed. If it has changed at all, you probably have a leak.

Write the number and unit it says here: \_\_\_\_\_

**Bonus:** If your water meter reading is in cubic feet, convert it to gallons. Or, if your water meter reading is in gallons, convert it to cubic feet. Use the equation to the right. Use the final water meter reading for this exercise.

Write the conversion here: \_\_\_\_\_

### Conversion Equation

*Cubic Feet to Gallons*

1 cubic foot = 7.48 gallons

100 cubic feet = 748 gallons

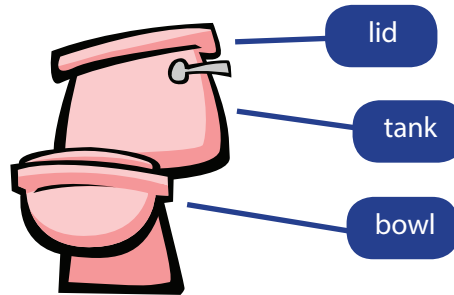
## Lesson 2: Be a Leak Detective

Some leaks are harder to find than others. They can be sneaky and silent, and you have to be a sleuth to detect them. Here is an experiment to help you track them down.

### Activity: Check for Toilet Leaks

For this activity you will need:

- Food coloring or dye tablets
- A clock or watch
- A helpful grown-up
- A toilet



### Instructions:

1. Remove the lid off the toilet tank. (Ask an adult for help—the lid can be heavy and hard to move.)
2. Add a few drops of food coloring or a dye tablet into the tank. Do not flush the toilet.
3. Wait 10 minutes. If color appears in the toilet bowl without flushing, it has a leak.
4. Flush the toilet immediately after the experiment ends to avoid staining inside of the tank.

### Do the Math:

A constantly running toilet can waste more than 200 gallons of water every day. How many gallons will the leaking toilet waste in a week (7 days)?

**Show your work here:**

**Write your answer here:** \_\_\_\_\_ gallons

**Bonus:** How many 8-ounce glasses of water could you fill with the amount of water saved from fixing the leaking toilet?

#### Conversion Equation

Fluid Ounces to Gallons

128 fluid ounces = 1 gallon

**Write above answer here:** \_\_\_\_\_ gallons

**Multiply it by**                      x    **128 fluid ounces**  
= \_\_\_\_\_ **fluid ounces**

**Divide it by**                         ÷    **8 fluid ounces**  
= \_\_\_\_\_ **glasses of water**



## Lesson 3: Do a Drip Scavenger Hunt

While toilet leaks are usually the biggest water wasters, even small drips from a faucet can add up.

### Activity: Check for Dripping Faucets, Showers, Pipes, and Hoses

For this activity you will need:

- A watch or clock with a second hand

#### Instructions:

1. Walk through your whole house, looking and listening as you go from room to room. Use the list at right as a guide on where to check for drips.
2. Check the appropriate checkbox if you find a drip or leak.
3. If you find a drip, use your watch to measure how many times it drips in one minute. If you find a pipe that isn't dripping, but is wet, write that down too.

Location of Drip	Drips per Minute
<b>Bathroom(s)</b>	
Faucet <input type="checkbox"/>	
Shower <input type="checkbox"/>	
Bath tub <input type="checkbox"/>	
<b>Kitchen</b>	
Faucet <input type="checkbox"/>	
Pipes under sink <input type="checkbox"/>	
<b>Outside</b>	
Hose <input type="checkbox"/>	
Sprinklers <input type="checkbox"/>	

#### Do the Math:

If a faucet leaks at the rate of 1 drip per second, how many gallons of water does it waste in 1 year?

Show your work here:

1 drip x 60 seconds x  
60 minutes x 24 hours  
x 365 days

= \_\_\_\_\_ drips

Divide it by

÷ 10,000 drips

Write your answer here:

\_\_\_\_\_ gallons

#### Conversion Equation

Drips to Gallons

10,000 drips = 1 gallon

If a shower leaks at the rate of 10 drips per minute, how many gallons does it waste in 1 year?

Show your work here:

10 drips x 60 minutes  
x 24 hours x 365 days

= \_\_\_\_\_ drips

Divide it by

÷ 10,000 drips

Write your answer here:

\_\_\_\_\_ gallons

#### Conversion Equation

Drips to Gallons

10,000 drips = 1 gallon

## Lesson 4: Share What You Learned

Now that you're an expert leak detective, share what you've learned with your family. Fixing leaks is a good start, plus there are many more ways you can save water and have fun doing it.

### Activity: Test Your WaterSense Game

For this activity you will need:

- Access to a computer with Internet or a paper handout of the game from your teacher

#### Instructions:

1. Log on to [www.epa.gov/watersense/kids/games.htm](http://www.epa.gov/watersense/kids/games.htm) to play *Test Your WaterSense*.
2. Move *Flo*, the water-saving character, through water pipes and answer questions while avoiding water-wasting monsters. Use the information you've learned in class and more facts found on the WaterSense Kids' website to test your knowledge.
3. Challenge your family to see who can get the best score.

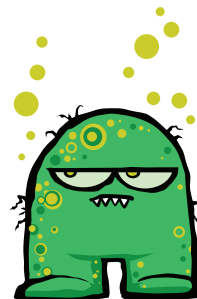


#### Drainiac

Drainiac lets water gush down the drain, especially when she brushes her teeth. This drains our water supply. Turn off the water while you brush your teeth and save eight gallons every time!

#### Swirly

Swirly wastes water by flushing the toilet too much. Don't use your toilet as a trashcan. If you flush just one less time a day, you could help save more than 500 gallons a year!



#### Drip Drip

Drip Drip likes to hear the sound of his own name. That's why he lets his faucet leak, wasting more than 3,000 gallons of water a year! Tightening the tap or replacing a washer can fix this problem.

#### Sogosaurus

Sogosaurus leaves her sprinkler on even after a rainfall. Make sure your family waters the yard only when needed—and don't water the sidewalk!



#### For More Information

Visit the WaterSense Fix a Leak Week site: [www.epa.gov/watersense](http://www.epa.gov/watersense)  
Or the WaterSense Kids' site: [www.epa.gov/watersense/kids](http://www.epa.gov/watersense/kids)