The Water Detective

Section I: In the group, develop a hypothesis of your water use at home.

1) I think I use _____ gallons of water each day.

2) I think my family uses _____ gallons of water each day.

3) I think there are _____ leaky, drippy faucets at my house.

4) My family gets their water from _____ (well, spring, city, other source)

5) The drains in my home connect to a _____ (city sewer, septic tank system)

Section II: At home, test your hypothesis.

1) Home Water Supply

Ask an adult where the water supply for your house comes from.

_____ (well, spring, city, other source)

2) Home wastewater system

Ask an adult where the water leaving your house goes.

The drains in my home are connected to _____ (city sewer, septic tank system)

3) My water use

Keep a tally of the number of times you use water over a 24-hour period. Record below.

	# of gallons used each time		**# of times/day**		**# of gallons/day**
Flush toilet	7	x		=	
Wash hands	1	x		=	
Brush teeth	3	x		=	
Take bath/shower	30	x		=	
Gallons of water/person/day				=(a)	

4) Family water use

in Family x (a) Gallons of Water/Person/Day = Gallons/Family/Day
_____ Family Members x (a)_____ = _____ Gallons/Family/Day

5) What's Drippin'

—Take a tour inside your house and outside in your yard. How many faucets or hoses can you find that are dripping? (b)_____

—Ask an adult if you may borrow a 1-cup measuring cup. Place it under a dripping faucet. How long does it take to become full?

It took _____ minutes for the 1-cup measuring cup to become full.

—There are 60 minutes in 1 hour. How many cups of water drip out every hour? Use a separate piece of paper to do your calculations. (Hint: If it takes 20 minutes to fill the cup one time, 3 cups will drip out in 1 hour.) _____

In 24 hours (or 1 day) how many cups of water will drip out? _____

How many cups of water does the faucet waste in 1 week? (c)_____ (Hint: There are 7 days in a week, each day is 24 hours long.)

—Now you'll use the data you have gathered to calculate the amount of water wasted on average in your home by all the leaky faucets. Use the numbers calculated in (b) and (c) above.

(b) # of Leaky Faucets_____ x (c) Cups of Water Wasted/Faucet/Week_____ = (d) _____ Total Cups of Water Wasted/Week

There are 16 cups of water in a gallon. To find the number of gallons of water wasted:

(d) Total Cups of Water Wasted/Week will be divided by 16 cups/gallon.

$$\frac{\text{(d) Total Cups of Water Wasted/Week}}{\text{16 cups/gallon}} = \text{\_\_\_\_\_ Gallons of Water Wasted/Week}$$

—If your home uses water from a public water system, your family pays a bill each month for the amount of water they use. These bills are usually based on the number of cubic feet of water used as recorded on the water meter at your house. Ask an adult how much they pay for each cubic foot of water used at your home. One cubic foot of water equals 7.5 gallons. How much money could be saved each week if all the leaky faucets were fixed?