

A Simple Case of "How Much?"

"Egads!" yelled Dr. Watson when he saw the headline splashed across the front page of *The News*. He read it again: **Water Use Tops 100 Gallons Per Person Daily in West-Central Florida**. "I cannot believe it," he muttered under his breath. He imagined that if one milk jug holds 1 gallon, then he must be using enough water to fill 100 milk jugs per day. The thought was astounding! And he wasn't alone, either. If the newspaper report was true, then everyone is using that much water.

The good doctor called his friend, the detective Showerlock Holmes. The detective, sensing Dr. Watson's distress, raced to the scene.

"How can it be?" Watson asked. "How can people possibly use that much water?"

"It's true, Watson. People use between 100 and 150 gallons of water per day."

"I can't believe my ears."

"Let's solve this mystery by finding out for ourselves how much water people use," Holmes suggested.

"How do we go about that?"

"Elementary arithmetic, my dear Watson," Holmes replied. "We'll start here in your home."

(turn to back of page)

*The Southwest Florida
Water Management District
provides this home water audit
designed for middle school students.*

Splash!
Water resources education



Exhibit A: SHOWERS

Multiply: number of showers per day by the average number of minutes per shower = _____

Exhibit B: BATHS

Number of baths per day = _____

Exhibit C: TEETH

Multiply: number of people in household by average time they brush their teeth per day = _____

Exhibit D: TOILET

Multiply: number of people in household by 4 (the average number of times people flush)= _____

Exhibit E: DISHES WASHED BY HAND

Multiply: number of times dishes are washed by hand daily by minutes the water runs = _____

Exhibit F: DISHWASHER

(answer only if you use one)

Divide: number of loads per week by 7 (days per week) = _____

Exhibit G: WASHING MACHINE

(answer only if you use one)

Divide: number of loads per week by 7 (days per week) = _____

Exhibit H: YARD WATERING

(answer only if you do so)

Multiply: number of watering days per week by watering minutes per day = _____

Now, **divide:** total watering minutes by 7 (days per week) = _____

Exhibit I: OTHER USES

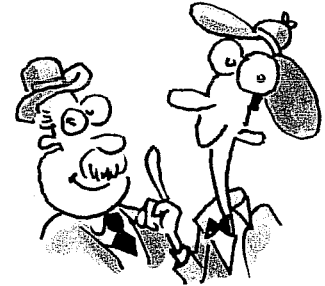
What are some other indoor uses of water?

_____ = 10 gallons per day
 (10 gallons per day are estimated to represent other uses)

Multiply: 10 gallons per day by number in the family = _____

WATSON: By George, now we have some numbers! What do we do now?

HOLMES: Relax, good Doctor. Copy your answers from above into column 3 below. If your household has older plumbing, use the 'High Flow' numbers in column 2. If your house was built in the last five years, or is retrofitted with low-flow fixtures, use the 'Low Flow' numbers in column 2. Multiply columns 2 x 3. Put the answers in column 4. Then add the numbers in column 4 together and that will give you the answer you are seeking!



| Water-Use Activity | Column 2 | | Column 3 | Column 4 |
|---|----------------|---------------|-----------------------|-------------------------|
| | High Flow | Low Flow | Mins. or Uses Per Day | Total Water Use Per Day |
| Exhibit A Showers | 7 gpm | 2.5 gpm | X _____ = X _____ | X _____ |
| Exhibit B Baths | 36 gal. (full) | 18 (1/2 full) | X _____ = X _____ | X _____ |
| Exhibit C Toothbrushing (water running) | 3 gpm | 1.5 gpm | X _____ = X _____ | X _____ |
| Exhibit D Toilet flushes | 6 gal./flush | 1.6 gpf | X _____ = X _____ | X _____ |
| Exhibit E Hand dishwashing | 3 gpm | 2.2 gpm | X _____ = X _____ | X _____ |
| Exhibit F Dishwasher | 15 gal./load | | X _____ = X _____ | X _____ |
| Exhibit G Laundry | 55 gal./load | | X _____ = X _____ | X _____ |
| Exhibit H Yard watering | 10 gpm | | X _____ = X _____ | X _____ |
| Exhibit I Other uses | 10 gpm | | X _____ = X _____ | X _____ |

Add the numbers in this column together

WATSON: But, Holmes! That number is way too high!

HOLMES: Yes, but there is still one final step. That number represents the water used by everyone in your home. Divide it by the number of people living in your household, and *voila!* You now have the average number of gallons used per person daily in your home!

_____ ÷ # in household = _____
 Average Number of Gallons Used Per Person Daily in Your Home

Southwest Florida Water Management District
www.WaterMatters.org



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