

Math Activity: How much does a shower really cost?

Water Rate per gallon: _____

Part I Instruction: Using the Typical Water Use Chart and the water rate, determine the cost of each activity listed.

	Things to Consider	Cost
Unit Rate (per gallon)	(from your water bill)	
Bath	Is your tub full size or larger/ smaller than average?	
Shower	How long do you shower for?	
Teeth brushing	Is your water on/off? Is it a new or old bath faucet?	
Hands/ face washing/ shaving		
Dishwasher	Is your dishwasher an energy efficient dishwasher?	
Dishwashing by hand	Is your kitchen faucet newer/ older?	
Clothes washing	Is your washer newer/ older?	
Toilet flush	Is your toilet newer/ older?	
1 glass of water (8 oz.)	Convert to gallon (1 gallon = 128 oz)	

Part II Instruction: Use the answers from part I to determine how much money is spent each week on the following.

Personal Water Use	Amount per week (X times)	Cost
Bath		
Shower		
Teeth brushing		
Hands washing		
Face washing		
Face shaving		
Leg shaving		
Toilet flush		
Glasses of water to drink		
Total Cost for personal water use for the week		

Family Water Use	Amount for family per week (consider X minutes and X times)	Cost
Dishwasher		
Dishwashing by hand		
Clothes washing		
Personal Water Use	Multiply the above total by how many people are in your family.	
Total Cost for the week for the family		

Divide your total monthly bill by the number of days: _____

Multiply above by 7 days: _____

Add minimum set amount: _____ = weekly water bill

How does your answer from the total cost for the week for the family compare to your weekly water bill? Why do you think it may be different? _____

<http://water.usgs.gov/edu/qa-home-percapita.html>

Typical Water Use Chart

Bath	A full tub is about 36 gallons.
Shower	2 gallons per minute. Old shower heads use as much as 5 gallons per minute.
Teeth brushing	<1 gallon, especially if water is turned off while brushing. Newer bath faucets use about 1 gallon per minute, whereas older models use over 2 gallons.
Hands/face washing	1 gallon
Face/leg shaving	1 gallon
Dishwasher	4 to 10 gallons/load, depending of efficiency of dishwasher
Dishwashing by hand:	20 gallons. Newer kitchen faucets use about 2.2 gallons per minutes, whereas older faucets use more.
Clothes washer	25 gallons/load for newer washers. Older models use about 40 gallons per load.
Toilet flush	3 gallons. Most all new toilets use 1.6 gallons per flush, but many older toilets used about 4 gallons.
Glasses of water drunk	8 oz. per glass (did you remember to drink your 8 glasses of water today?)
Outdoor watering	5 to 10 gallons per minute