

Water Conservation: Are You A Water Wizard?

Calculate your weekly water use to find out! Estimate the amount of water you use in a typical week by filling in the table below with the number of times you usually do each activity in one week. Multiply your total by the water use (gallons) to determine the total weekly use in gallons.

Water Use Table

Student answers will vary, sample data shown

Activity	Number of Times Per Week	Water Use (Gallons)	Total Weekly Use (Gallons)
	2 <i>Total</i>	35	70
Shower (10 min)	5 <i>Total</i>	50	250
Teeth Brushing	14 <i>Total</i>	5	70
Hand Washing	35 <i>Total</i>	5	175
Washing Machine (clothes)	1 <i>Total</i>	35	35
Toilet Flush	35 <i>Total</i>	3	105
Dishwasher	3 <i>Total</i>	15	45
Washing Dishes by Hand	3 <i>Total</i>	15	45
Drinking Water <small>assuming 1/2 gallon of water per day</small>	7 <i>Total</i>	0.5	3.5
Cooking a Meal	10 <i>Total</i>	3	30
Watering Small Lawn	4 <i>Total</i>	100	400
Total Weekly Gallons			1,228.5

Multiply Number of Times Per Week by Water Use (gallons).

Design Challenge: Design a plan to reduce your weekly water use by 25%.

Add the total weekly use for each activity.

$$\begin{array}{ccccccc}
 \underline{1,228.5} & & x & 0.25 & = & \boxed{307.125} & \\
 \text{Total Weekly Gallons} & & & & & & \text{25\% Weekly Use to Conserve}
 \end{array}$$

Station – Land Contouring

Student answers will vary,
sample data shown

Complete the following table as you explore methods of land contouring to reduce surface runoff and conserve water.

Trial	# Water Beads Total	# Beads in Run-off (at bottom of tray)
Control (no land contouring)	50	43
Berm 'n' Basin OR Boomerang Berms	50	4

2. Which method had the lowest amount of surface run-off? (circle one)

Control (no contouring) or Land Contouring (changing the shape)

Station – Rooftop Rainwater Harvesting

Student answers will vary,
sample data shown

1. How much rainwater will your roof collect _____ % of the rainwater. (circle one)

0 – 25% 26 – 50% 51 – 75% 76 – 100%

2. Complete the following table after you measure the amount of water collected in the cistern.

Amount of Rainwater Harvested (mL)	% of Total Rainwater Harvested (mL harvested ÷ 500) × 100
382	76%

3. Was your prediction correct? (circle one) yes no

4. Was the actual amount of rainwater harvested higher, lower, or equal to your prediction?
(circle one)

Higher Lower Equal

Design Challenge

1. Explain why it is important to practice water conservation methods in a changing climate.
Student answers will vary. However, students should cover the idea that increasing temperatures due to climate change will result in reduced snowpack, reduced soil moisture, and more extreme events (such as droughts). Some parts of New Mexico will also get decreased total precipitation. It will therefore be important for every New Mexican to try to conserve as much water as possible.

2. **Design Challenge:** *Design a plan to reduce your weekly water use by 25%.*

25% of Weekly Water Use: 307.125 gallons

Action	Water Use Activity <small>For which activity from your water use survey does this reduce water need?</small>	Gallons Per Week
Limit shower time, reduce by 3 minutes per shower	Shower	105
Water lawn one less day per week	Watering a small lawn	100
Install low-flow toilets	Toilet flush	52.5
Scrape food into trash	Washing dishes by hand	15
Capture shower greywater 3x per week	Shower	45
Total Gallons Saved Per Week:		317.5 gallons saved per week

Student answers will vary, sample data shown

3. Reflect on the plan you designed above. What challenges could you encounter when trying to implement this plan? What would the hardest part of plan be? What about the easiest?

Student answers will vary. Example answer: It could be difficult to reduce my shower time by three minutes per shower at first if I don't have a timer to keep track of how long I am in the shower, but I will probably get used to taking shorter showers eventually. If I can afford a low-flush toilet, that seems like a very easy solution because once you install the new toilet you do not have to think about it again.