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My Dishwasher - Full Loads

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1. Impact Design

Impact Statement - If I commit to only running full loads when using my dishwasher, then I will reduce my water footprint and save money.

Community Alignment	
Group	Goal/Action
<p>Cascade Water Alliance - Municipal corporation comprised of five cities and two water and sewer districts, providing safe, clean, reliable water supply to its 380,000 residents and more than 20,000 businesses.</p>	<p>Cascade's water efficiency savings goal is a cumulative savings of 0.4 million gallons per day on an average annual basis for the period 2019 – 2022. In 2020, Cascade achieved an estimated savings of 48,316 gallons. Along with 2019 savings, this represents 47.7% of Cascade's 2019-22 Water Use Efficiency Savings Goal.</p>

Procedure - Steps for implementation!

1. Track current home dishwasher behavior for two weeks. Mark each load as $\frac{1}{4}$ full, $\frac{1}{2}$ full, or full on a Google Spreadsheet.
2. Use dishwasher details to calculate how much water my family is using to run the dishwasher on average each week. See the "Data" section below to learn how to quantify this.
3. Communicate with family members and adjust personal behaviors to strive for 100% full dishwasher loads.
4. Collect new data in my Google Spreadsheet by recording each dishwasher as $\frac{1}{4}$ full, $\frac{1}{2}$ full, or full.
5. Calculate how many gallons of water are being used to run the dishwasher each week. Look for declining trends. Find my family's water bill and estimate the money saved from using less water.

2. Impact Data Tracking - Quantify your impact!

A half full dishwasher wastes [half](#) of the water your dishwasher requires per load.

After looking into my dishwasher model, I've discovered that it uses **roughly 2.9** gallons of water per load.

According to the [EPA](#):

- Older Dishwasher Models: Uses up to 10 gallons per cycle
- Average Dishwasher: Uses 6 gallons per cycle
- ENERGY STAR Certified Dishwasher: Uses approximately 3.5 gallons per cycle

Initial Data:

Times per week my dishwasher is run....

¼ full: **1** ~ it's only partially full where ¼ of the water used is needed and ¾ of the water is wasted

½ full: **2** ~ it's only partially full where ½ of the water used is needed and ½ of the water is wasted

Full: **3** ~ no water wasted

Total Preventable Water Waste =

(1 time per week my dishwasher is run ¼ full)(2.9 gallons of water per load)(¾ of water wasted)

+ (2 times per week my dishwasher is run ½ full) (2.9 gallons of water per load)(½ of water wasted)

= (1 x 2.9 x ¾) + (2 x 2.9 x ½) = **5.075** preventable gallons of water waste each week

Total gallons of water used per week = (6 loads of dishes)(2.9 gallons of water per load) = **17.4** gallons of water per week

My family only needs to use **12.325** gallons of water per week (**17.4** gallons used - **5.075** unnecessary water waste).

We can reduce our total water used!

Data after Behavior Adjustments:

Times per week my dishwasher is run....

¼ full: **0** ~ it's only partially full where ¼ of the water used is needed and ¾ of the water is wasted

½ full: **1** ~ it's only partially full where ½ of the water used is needed and ½ of the water is wasted

Full: **3** ~ no water wasted

Total gallons of water used per week = (4 loads of dishes)(2.9 gallons of water per load) = **11.6** gallons of water per week

We decreased our total gallons of water use per week by **5.8** gallons!

(5.8 gallons)(52 weeks in the year) = **301.6 gallons of water saved per year.**

Extra Considerations: If my family switched from a **2.9** gallon dishwasher to a 3.5 gallon Energy Star dishwasher from the [EPA's product list](#), we would use **14** gallons of water per week instead of **11.6**. This would equate **124.8** additional gallons per year (**2.4** gallons more used per week x 52 weeks)

My family owns an LG dishwasher that only uses about 2.9 gallons of water per cycle, so converting to a 3.5 gallon-per-cycle washer would be less beneficial for both my family and our community.



3. Impact Storytelling - Share your data with who needs to know! See more [tips](#)

Think on 4 scales of stakeholders... Family, School, Community, and Aligned Groups

Stakeholder	Interests	Approach
Family — Extended family (cousins, aunts, uncles, Grandparents, etc...)	Eliminating unnecessary water usage	Conservation: Conversations about how we as a family can all be more sustainable together, discussing changes in water bills, and when the right time is to upgrade to a more sustainable dishwasher.
School — Classmates	Sustainability	Conservation: Casual conversations with peers about what I've been doing at home, gauge interest for others to do the same.
Community — Neighbors	Sustainability	Conversation: Casual conversations with peers about what I've been doing at home, gauge interest for others to do the same.
Aligned Groups — City Council	Sustainability, saving money	Public Comment: City council meeting public comments — report personal results and encourage others to do the same.

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