

Sample Worksheet - Filled

Energy and the Environment: A Personal Impact Study

Group Info

Group Member Names:

- Alice Chen
- Rafael Morales
- Priya Desai

Course & Section: PHYS 101 – Monday & Wednesday 10:00AM-11:50AM

Instructor: Dr. Albert Einstein

1. Local Energy Profile

What utility company provides your home's electricity?	Con Edison
Does your household use other energy sources?	Yes – natural gas for heating and cooking
What is the source of your electricity?	Mostly natural gas and nuclear with some hydro
Where does this energy originate?	Upstate NY and parts of NJ/PA (include specifics)
What is your local electricity rate (¢/kWh)?	21.5 ¢/kWh

2. Appliance & Device Audit

Group Member Name: Rafael Morales

Appliance / Device	Power Rating (W)	Avg Use (hrs/day)	kWh/day	Monthly kWh	Monthly Cost (\$)
Refrigerator	150	24	3.6	108	\$23.22
Microwave	1000	0.3	0.3	9	\$1.94
Laptop	65	6	0.39	11.7	\$2.51
Air Conditioner	1000	5	5	150	\$32.25
TV	120	4	0.48	14.4	\$3.10

Total Monthly Usage: **293.1 kWh**

Total Monthly Cost: **\$62.98**

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3. Group Comparison

Metric	Alice	Rafael	Priya
Total Devices Audited	6	5	6
Total Monthly kWh Used	255	293	180
Total Monthly Energy Cost	\$54.83	\$62.98	\$38.70
Highest Energy Device	Heater	Air Conditioner	Washer/Dryer
Most Used Device	Laptop	Refrigerator	Laptop

Notes / Observations:

- Rafael's higher usage is due to extended air conditioning use.
- Alice and Priya both use laptops extensively for coursework.
- Priya's household is more efficient overall, likely due to shared appliances.

4. Recommendations

Recommendation	Reason / Expected Impact	Feasibility or Challenges
Use smart plugs on high-use devices	Monitor and reduce standby energy use	Easy to install but requires upfront cost
Raise thermostat to 76°F during summer	Reduce AC energy load	May be less comfortable during heatwaves
Switch to LED lighting	Lower lighting energy use by ~80%	Simple switch, moderate cost

5. Individual Reflection Summary (Priya Desai)

I was surprised to learn how much energy is consumed by appliances that are always on, like refrigerators or standby devices. Tracking my personal energy use helped me see how small changes, like adjusting the thermostat or unplugging devices, could lead to significant savings. I plan to talk to my family about switching to LED bulbs and being more conscious of our AC usage.