

Assignment 1: LIFESTYLE PROJECT - Part 2 - Baseline Data Calculations

Now that you have recorded your activities for two days, you can translate your actions into figures. Use the instructions and data below to quantify some of your environmental impacts.

1. Energy Consumption

1A. Transportation

- You should have the number of miles driven for Days 1 and 2 already in columns B and C. Go to www.fueleconomy.gov to find the mpg (miles per gallon) of your vehicle. If your mileage was from more than one vehicle, find the mpg of those vehicles, average the mpg, and put that number in column D, line 5. Columns E and F have formulas already entered and after you enter in the mpg in column D, those calculations will follow. Column E determines how many gallons of gas you used. Column F shows how many BTU (British Thermal Units) were used.

1B. Industrial Energy Consumption

This is not something that can be easily quantified, so just record the list of products that you purchased.

1C. Residential Energy Use

Hot Water-

- You should have the number of minutes each task took entered in columns B and C. If you skipped one of the items, enter zero (0). Do not leave any blanks. Column D has the number of gallons/minute used for each item. Columns E and F have formulas entered in them to compute the gallons used (Column E) and the BTUs used (Line 28, Column F).

Electricity-

- Enter the number of hours each appliance was used. If the item was not used, enter a zero (0). Do not leave any blanks. For each item, using the table below, enter the number of watts the item uses in Column E. Columns F and G will self-calculate using formulas already entered with column F computing the kilowatts/hour used and column g calculating the BTUs for that item.
- Several appliances were added to the list below – be sure to use the correct wattage.
- If you want to find out what the wattage (W) is for something that is not given below (indicated by a blank instead of a number) then look on the back or bottom of the item, and it usually is written there. If it does not indicate the wattage, then look for the amperage (A). The number of amps multiplied by 120 (volts) is equal to the wattage.

Example: this computer uses 1 amp x 120 volts = 120 watts

	Wattage		Wattage
Refrigerator (large)	750	Microwave	1,450
Refrigerator (medium dorm size)	330	Stove (electric)	12,000
Refrigerator (small dorm size)	300	Oven	12,000

Washing machine	375	Clock	4
Dryer (electric)	5,000	Iron	1,000
Incandescent lights (wattage on bulb)	_____	Hair dryer	1,500-1,875
Fluorescent lights	18	Electric razor	_____
Radio (clock or other)	20	Computer	120-240
Dishwasher	1,200	Inkjet printer	5 watts off 30 watts printing
Stereo (full size)	80	Toaster	800-1,500
TV (tube)	130	Coffee pot	750-1,200
TV (flat screen)	120		
DVD player	35	Toaster oven	1,225
Game console (x-box or Playstation)	100	Vacuum cleaner	800-1,100
Computer monitor (awake/asleep)	150/30	Dehumidifier	785
Cable box – Comcast (on or off)	10	Other _____	_____
HD-DVR – cable co (on/off)	29/28	Other _____	_____
HD-DVR – satellite (on or off)	31	Other _____	_____

2. Food

It's hard to quantify how much energy and resources go into what we eat, so we're just going to make some general observations. Generally, the less processed a food is, the less energy goes into making it; so fruits and vegetables require the lowest energy input (and waste output) per calorie. A highly processed food (twinkies, for example) requires more energy input and waste output per calorie compared to a more simple food like an apple. The category of food with the highest environmental toll in terms of energy and water input and waste output is meat. For example, it takes 2,500 gallons of water to produce one pound of meat. This is because energy and water must first go into the production of grain crops, which are then fed to the livestock. Most animals are about 10 percent efficient at converting the energy from eating plants into muscle. The other 90 percent is used in the daily activities of the animal or is dissipated as heat. So this means that it takes approximately ten times the resources to produce meat as it does to produce vegetables.

Another factor with food is the transportation. An apple grown nearby will have a much lower energy cost than one that's shipped from the southern hemisphere.

- Classify your foods into three categories in Column B: **unprocessed** (fruits, vegetables, whole grains), **minimally processed** (pasta, bread), **highly processed** (twinkies, cheese doodles), and meats. In column C, for each item, put an "L" if that item was grown locally (within a 100 mile radius).

3. Water

- Enter the appropriate totals in columns B and C. Column E will self-calculate using the flow rate (number of gallons used) in column D. Line 85, column E will show the total number of gallons used over two days.

4. Waste

This is something we don't really need to quantify, because we can keep track of it by listing the items individually. If you really wanted to quantify it, you could weigh the amount of stuff you throw out, but it's probably easier to just write it all down. So just record the list of garbage, recycling, and compost that you generated over the two day period.