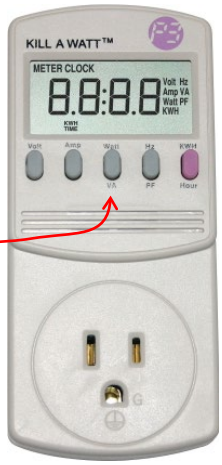
 Name Class Fall 2026

WINDOWS TO THE UNIVERSE: PLUGGED IN TO CO_2

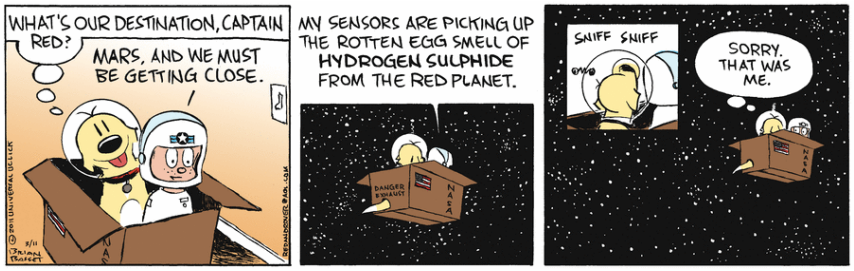


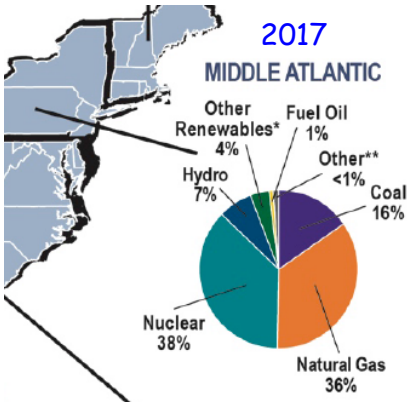
ELECTRICITY USED BY APPLIANCE IN ONE YEAR

Use a Kill-A-Watt meter to measure the power drawn by some appliances while in use and record them below.

a) Plug the Kill-A-Watt into an outlet
b) Plug appliance into the Kill-A-Watt, press "Watt"
c) Record the power used (B)
d) Estimate the hours it's used each day (C)
e) Multiply the power times the hours (B x C) for Watt-hours per day
f) Divide by 1000 to change to kilowatts (1 kW = 1000 W) for kWhr per day
g) Multiply by 365 for KWhr per year[15]

A	B	C	D	E	F
Appliance	Power Used	Daily hours of use	Energy per Day		Energy per Year
	Watts	Hours/Day	Watt-hours	kilowatt-hours	KWhr/year
			B x C	D/1000	E x 365
"100 W" Incandescent	95.7	9	861	0.861	314.4
"100 W" CFL	19.5	9	176	0.176	64.1
"100 W" LED	13.8	9	124	0.124	45.3





Using the 2017 New York fuel diversity[1] shown by the Edison Electic Institute[2] and the pounds of CO_2 released by each fuel producing 1 kWhr, calculate the CO_2 released by annual use of each appliance.[2]

Appliance	kWhr produced (G)			Pounds of CO_2/kWhr			Total CO_2
	Coal	N. Gas	Oil	Coal	N. Gas	Oil	
	F x 0.16	F x 0.36	F x 0.01	G x 2.095	G x 1.321	G x 1.969	(sum) pounds
"100 W" Incandescent	50.3	112.2	3.14	105.4	149.5	6.2	261
"100 W" CFL	10.3	23.1	0.64	21.5	30.5	1.3	53
"100 W" LED	7.3	16.3	0.45	15.2	21.6	0.9	38

[1] https://www.nytimes.com/interactive/2020/10/28/climate/how-electricity-generation-changed-in-your-state-election.html
[2] http://www.eei.org/issuesandpolicy/generation/fueldiversity/Documents/map_fuel_diversity.pdf