



Energy Conservation

CALCULATING DAILY ENERGY USE AND COST OF LIGHTING | ELEMENTARY CLASSROOM AUDIT

Name: _____ Date: _____

Room #: _____ Teacher: _____ Circle one: Baseline Audit Post Audit

Note: **Example with Answers**

1. If you can safely look at the light bulb, read how many watts it uses. For overhead lights, ask your teacher or custodian for the wattage of each tube bulb.

LIGHT SWITCH/LAMP	# OF BULBS	WATTS/BULB	TOTAL WATTS/SWITCH/LAMP	TOTAL KILOWATTS/SWITCH/LAMP 1 KILOWATT = 1000 WATTS	HOURS ON/DAY	TOTAL kWh/DAY
Switch 1	48	17	$48 \times 17 = 816$	$816 \div 1000 = 0.816$	7	$.816 \times 7 = 5.712$

LIGHT SWITCH/LAMP	# OF BULBS	WATTS/BULB	TOTAL WATTS/SWITCH/LAMP	TOTAL KILOWATTS/SWITCH/LAMP 1 KILOWATT = 1000 WATTS	HOURS ON/DAY	TOTAL kWh/DAY

Note: Copy and paste this table to a new page if you need more space or recreate the table on another sheet of paper.

2. Calculate the sum for the “total kWh/day” (last column). **5.712 kWh/day** | _____ kWh/day
3. Ask your teacher or use your state’s average cost, EIA.gov, <https://www.eia.gov/electricity/state/> for the cost/kWh. **\$0.096** cents/kWh | _____ cents/kWh

SUM TOTAL kWh/DAY	CENTS/kWh	TOTAL COST IN CENTS/DAY
5.712	\$0.096	$5.712 \times .096 = .54$



OPTIONAL ACTIVITY.

Calculating Vampire Energy Use and Cost of Electronic Devices

Note: **Example with Answers.** Round to the nearest thousandth's place.

1. Ask your teacher how many hours the room is NOT in use: **17 hours** | _____ hours
2. Ask your teacher if you should use a watt meter to measure the watts used for the different modes for the electronic device you are investigating, or if those numbers will be given to you (column 3, WATTS).

ELECTRONIC DEVICE	MODE	WATTS	KILOWATTS 1 KILOWATT = 1000 WATTS	# IN EACH MODE	HOURS NOT IN USE	TOTAL kWh/NIGHT (KILOWATTS x NUMBER x HOURS)
Desktop Computer	Active	73.97	$73.97 \div 1000 = 0.074$	2	17	$0.074 \times 2 \times 17 = 2.516$
	Sleep	21.13	$21.13 \div 1000 = 0.021$	0	17	0
	Off, Plugged In	2.84	$2.84 \div 1000 = 0.003$	1	17	$0.003 \times 1 \times 17 = 0.051$
	Off, Unplugged	0	0	0	17	0

3. Now, choose an electronic classroom device, fill in the data, and solve the equations.

ELECTRONIC DEVICE	MODE	WATTS	KILOWATTS 1 KILOWATT = 1000 WATTS	# IN EACH MODE	HOURS NOT IN USE	TOTAL kWh/NIGHT (KILOWATTS x NUMBER x HOURS)
	Active		$\div 1000 =$			
	Sleep		$\div 1000 =$			
	Off, Plugged In		$\div 1000 =$			
	Off, Unplugged	0	0	0		0

4. Calculate the sum for the “total kWh/night” (last column). **2.567 kWh/night** | _____ kWh/night
5. Ask your teacher or use your state’s average cost, EIA.gov, <https://www.eia.gov/electricity/state/> for the cost/kWh. **\$0.096 cents/kWh** | _____ cents/kWh

SUM TOTAL kWh/DAY	CENTS/kWh	TOTAL COST IN CENTS/DAY
2.567	\$0.096	$2.567 \times .096 = \$0.25$