



Energy Investigation - Data Collection & Analysis

Use the table below to track at least five devices, electronics, or appliances of your choice. Search around your school or learning environment for different devices, electronics or appliances that you want to investigate (e.g. vending machine, computer, etc). With either a watt meter or by conducting your own research on the internet, identify the amount of Watts the specific device, electronic, or appliance uses. Using GreenLearning's Electrical Energy Calculators, calculate the amount of electricity (kWh), greenhouse gases (GHGs) and cost per year. Feel free to measure additional devices, electronics, or appliances. If there is also a phantom load associated with the device, electronic or appliance, please use the wattmeter or research from the internet to indicate the phantom power.

Hint: make sure to review the Data Collection & Analysis section of the Assessment Rubric under the Learners Plans & Actions category.

Phantom Power: an electronic device or appliance that uses electricity even when turned off

Once the following tables are complete, continue to the next section of your energy savings plan.



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Section A: Data Collection & Energy Calculations (10 points)

Data Collection Table

Note: if using a wattmeter, only using it to determine the number of Watts

Device, Electronic or Appliance	Number of Watts (W) (when turned on)	Length of Time Used (minutes)	Province
<i>Computer Monitor</i>	<i>17.2</i>	<i>60</i>	<i>ON</i>



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Energy Calculations

Note: for this section use the [Electrical Energy Calculators](#)

Device, Electronic or Appliance	Number of Watts (W) ($kWh/year = Watts \times Hours$ <i>per use x Number of Times</i> <i>Used per Year /1000</i>)	Greenhouse Gases Expended (kg of GHG/year)	Cost (\$/year)	Is this device, electronic, or appliance using phantom power? If so, how much (W)?
Computer Monitor	6 kWh/year	168g = 0.168kg	\$0.91	Yes (0.1W)



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Section B: Now that you've selected and compared devices, complete the following questions:
(10 points)

1. Analyze Results (5 points)

a) Which device uses the most energy? Is it because of how often it's used or how much Power (W) it consumes? Or is it both?

b) If you could reduce the use of one device, which would it be and why?

2. Hypothesize & Research (5 points)

a) Create a hypothesis about how one of the devices you investigated could be used more efficiently.

b) Conduct research to determine whether your hypothesis is correct. Identify if the device you selected can be replaced with a more energy-efficient alternative. Make sure to provide any references to where you received your information (i.e. URL link, etc.)