



Meter Mutant: Thinks it's cool to waste energy.

ACTIVITY 1 KIDS KNOW ENERGY CONSERVATION

Do you know how much electrical energy is used in your classroom? Today, you're going to find out.

You'll be conducting an energy assessment by calculating how much electricity it takes to power the lights, computers, monitors, and other electronic devices in your classroom. This is not the same as a professional energy assessment, which uses technical diagnostic equipment by a licensed professional and carefully inspects hard-to-reach areas of your home or building to determine how much energy is being wasted. But your visual energy assessment will provide a good initial picture of how much electricity you are using in your classroom, and some ideas about how you can start saving energy and money.

PART 1 Electricity consumption is measured in kilowatt-hours (kWh). To calculate kWh, you multiply the wattage of an electronic device times the number of hours it is in use, and divide by 1,000. For example, a 100 watt light bulb that burns 24 hours a day will use 2.4 kWh of electricity per day: $(100 \times 24) \div 1000 = 2.4$ kWh. You can usually find the wattage printed on the back or bottom of an electronic device, or on its nameplate. If you can't find the wattage of a classroom device, go to energy.gov/energysaver/articles/estimating-appliance-and-home-electronic-energy-use for a list that shows the typical wattage for many different devices.

Work in groups to research electricity use in your classroom, recording your data on the chart. Be on the lookout for electricity "vampires" — devices that use electricity whenever they are plugged in even if not in use, like a phone charger or any device that displays the time. You'll find a list of electricity vampires and the watts they consume at standby.lbl.gov/summary-table.html.

PART 2 In Virginia, the average kWh of electricity costs for all energy users (residential, commercial and industrial) is approximately 9¢.* Use your data to estimate how much it costs to power your classroom during the school year, and how much it costs to power all the classrooms in your school.

	Wattage	X	Hours used per day	÷ 1000	Daily kWh consumption
Lighting (Overhead lights, lamps)		x		÷ 1000	
Clock		x		÷ 1000	
Computer		x		÷ 1000	
Computer Monitor / Laptop		x		÷ 1000	
TV		x		÷ 1000	
Digital Whiteboard		x		÷ 1000	
Media Player (DVD, CD, etc.)		x		÷ 1000	
Electronic Device Charger		x		÷ 1000	
		x		÷ 1000	
		x		÷ 1000	
		x		÷ 1000	
		x		÷ 1000	
TOTAL DAILY kWh					

Total Daily Classroom kWh	x 30 =	Monthly kWh	x 9.5 months =	Yearly kWh	x .09 =	Yearly Cost
	x 30 =		x 9.5 months =		x .09 =	
Classrooms in School						x
Total Yearly Cost						

PART 3 Now look back at your energy assessment for ideas on how you could use less electricity in your classroom and save money for your school. Are there devices you could unplug or turn off? Are there needed repairs or changes to request from your maintenance staff? Brainstorm in your group and write your energy conservation ideas here. Then share ideas in a class discussion to come up with an energy savings plan for your school.

PART 4 You've seen how electricity use adds up and how saving energy means saving money. Use what you've learned by conducting a basic energy assessment at home. Make a chart like the one above to calculate the kWh used by the electronic devices in your home each day, then estimate how much it costs to power your home each year, using the average residential kWh price of 11.4¢.* (You can check your estimates with your family's monthly electric bills.) Once you've gathered the facts, work with your family to come up with an energy savings plan for your home. Visit www.virginiaenergysense.org/at-home for ideas.



* Average prices based on U.S. Energy Information Administration (EIA) Electric Power Monthly report, May 2014. For more information, visit http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_6_a

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