



School Energy and Recycling Team
Department of Facilities Management
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ARE YOUR COMPUTERS ON?

Do you know how many computers are in your school? This number is very important because your SERT Team could save energy by simply shutting down your computers, printers and scanners at the end of the day.

If your school does not have a shut down procedure and the computers are left on at the end of the day there is a possibility they are on all night. Some schools have multiple computer labs, a media center, and computers in every classroom. This energy waste adds up!

To promote an energy efficient school please check to make sure your computers are shutting down at the end of the day. Take this opportunity to meet with your media assistant and building service manager to see if the computers in your school are shut down in the evening. The central office does send an automatic shut signal to the computers to shut them down in the evening, but it is always good to check and make sure that your computers are shutting down. Sometimes there is a miscommunication or problem with this and the shut down does not take place. Your computers could be on all night and all weekend. Let's look into this.

To determine the amount of energy you can save by shutting down your computer please use a Watt Meter to determine how many watts your computers and printers use. Answer the questions on the following page and calculate the savings you could achieve.

SAVING ENERGY WITH COMPUTER SHUT DOWN

How many computers are in your school? _____

Does your school have an in school procedure for shutting down computers and printers at the end of the day? _____

What time are your computers shut down? (Remember to check with your building service manager to check for the time they are shut down) _____

How many hours per day is your computer on after the school day is over? _____

How many Kilowatt hours are used by each computer? _____

How many Kilowatt hours are used by each printer? _____

What is your cost per kWh? _____

Calculate the costs of how much the computers/printers use from the time your school closed to the time it opens the next day.

Formula:

Watts x hours a day x number of days = Watt-hours
_____ x _____ x _____ = _____ Watt-hours

Watt-hours/1,000 = kWh

_____/1,000 = _____ kWh /month

_____ kWh/month x 10 = academic year kWh

kWh x .125 cents = cost avoidance

SAVING CALCULATION EXAMPLES

(TEACHER RESOURCE)

Please note that the following are examples. Students should measure your school's actual Watts with Watt meters to start this activity. Watt meters are available through your SERT Facilitator. To borrow meters please contact the SERT office at (240) 314-1090.

Most schools have labs w/multiple computers and one or two supporting printers and scanners. Classrooms may have the same set up depending on the school. You should use the Watts measured from your school to make the calculations necessary to complete this activity.

If Energy Waster Elementary School dismisses at 3:30 p.m. and the computers are not shut down until 8:30 p.m., then they are on for 5 hours a day, 5 days a week, while not being used. If each computer (cpu, monitor & printer) uses 196 Watts, then to calculate your potential costs savings you would do the following:

$[81 \text{ Watts (cpu \& monitor)} + 115 \text{ Watts (printer)}] 196 \text{ kWh} \times (5 \text{ hours a day} \times 5 \text{ days a week}) \times (4.33 \text{ weeks/month}) \times 10 \text{ months} = 212,170 \text{ Watt hours}/1,000 = 212.17 \text{ kWh per year.}$

$196 \times 25 \times 4.33 \times 10 = 212,170 \text{ Watt hours}$

$212,170/1000 = 212.17 \text{ kWh}$

$212.17\text{kWh} \times .125 \text{ cents per kWh} = \$26.52 \text{ per computer/per academic year}$

$250 \text{ computers} \times \$26.52 = \$6,630 \text{ per year potential savings}$

If Super Waster High School dismisses at 2:30 and the computers are not shut down because of incompatible equipment, then they are on for 17 hours a day 5 days a week, and 24 hours a day on the weekends, while not being used. If each computer (cpu, monitor & printer) uses 196 Watts, then to calculate your kWh's you would calculate the following:

$196\text{W} [(17 \times 5) + (24 \times 2)] \times 4.33 \text{ weeks in a month} \times 10 \text{ months} =$

$196 \times 133 \times 4.33 \times 10 = 1,128,744.4 \text{ Watt hours}$

$1,128,744.4/1000 = 1,128.74 \text{ kWh}$

$1,128.74 \text{ kWh} \times .125 \text{ cents per kWh} = \$141.09 \text{ per computer/per academic year}$

$500 \text{ computers} \times \$141.09 = \$70,546 \text{ per year potential savings}$

CONCLUSION

How can you remind teachers and students to turn off their computers at night?

Write a paragraph describing what you think should be done to help remind teachers and staff to turn off the computers and printers in your school at the end of the day.

