

# ACTIVITY GUIDE PUT ENERGY EFFICIENCY IN PLAY



## CONDUCT AN ENERGY AUDIT

The first step to reducing your energy use is to count how many energy consuming items you have. How many of these energy consuming items do you have in your home or in the classroom?



\_\_\_ Cell Phone Charger



\_\_\_ LCD TV



\_\_\_ Laptop Charger



\_\_\_ Desktop Computer



\_\_\_ Game Console



\_\_\_ Light Bulb

Now let's review your energy habits. If you have any of the energy-consuming items listed above, answer the question(s) that are associated with each on the next page.

# ADD IT UP

After you answer each question, add the corresponding number to your energy total in the next section.



## Cell Phone Charger

1. Do you keep your phone charger plugged in when it's not charging your phone?

Yes, add **0.26 watts (W)** per cell phone charger to your energy total. No, add **0** to your energy total.

2. Do you charge your cell phone overnight and/or keep it plugged in after it's fully charged?

Yes, add **2.24 W** per cell phone to your energy total. No, add **0** to your energy total.



## Desktop Computer

3. Do you leave your desktop computer turned on when you're not using it?

No, add **2.84 W** per computer to your energy total. If Yes, see below:

Do you set it to sleep mode when you're not using it?

Yes, add **21.13 W** per computer to your energy total. No, add **73.97 W** per computer to your energy total.



## LCD TV

- 4a. About how many hours a day do you have the LCD TV turned on? \_\_\_\_\_

- 4b. About how many hours a day do you have the LCD TV turned off? (24hrs - \_\_\_\_\_ )  
(answer from 4a)



## Game Console

5. Do you leave your game console turned on when you're not using it?

No, add **1.01 W** per game console to your energy total. If Yes, see below:

Do you set it to ready mode when you're not using it?

Yes, add **23.34 W** per game console to your energy total. No, add **26.98 W** per game console to your energy total.



## Laptop Charger

6. Do you keep your laptop charger plugged in when it's not charging your laptop?

Yes, add **4.50 W** per laptop charger to your energy total. No, add **0** to your energy total.



## Light Bulbs

7. Do you leave the lights on when people aren't in the room? (This question assumes all bulbs are equivalent to **60 W**)

No, add **0** to your energy total. If Yes, how many of your light bulbs are:

Incandescent: \_\_\_\_\_ \* (60W) = \_\_\_\_\_ W

Fluorescent: \_\_\_\_\_ \* (15W) = \_\_\_\_\_ W

LED: \_\_\_\_\_ \* (12W) = \_\_\_\_\_ W

Sum of light bulb watts = \_\_\_\_\_ W

(Add this number to your energy total.)

## CALCULATE YOUR ENERGY TOTAL

After answering the questions above, complete these calculations to discover how much energy these items draw when they are not in use.\*

1. \_\_\_\_\_ W \* (22 hours) = \_\_\_\_\_ Watt-hours (Wh)  
2. \_\_\_\_\_ W \* (6 hours) = \_\_\_\_\_ Wh  
3. \_\_\_\_\_ W \* (19 hours) = \_\_\_\_\_ Wh  
4a. 150 W \* \_\_\_\_\_ hours turned on = \_\_\_\_\_ Wh  
4b. 6.4 W \* \_\_\_\_\_ hours turned off = \_\_\_\_\_ Wh  
5. \_\_\_\_\_ W \* (23 hours) = \_\_\_\_\_ Wh  
6. \_\_\_\_\_ W \* (22 hours) = \_\_\_\_\_ Wh  
7. \_\_\_\_\_ W \* (22 hours) = \_\_\_\_\_ Wh

Energy used per day: \_\_\_\_\_ Wh /1000 = \_\_\_\_\_ kilowatt-hours (kWh) of energy/day  
(Sum of rows 1-7)

Energy used per year: \_\_\_\_\_ kWh \* 365 days = \_\_\_\_\_ kWh of energy/year

Use the [US Environmental Protection Agency's \(EPA\)](#) greenhouse gas equivalencies calculator to convert your annual energy total to greenhouse gas emissions.

**How many miles would an average passenger vehicle need to drive to produce the same amount of emissions? Compare your results with friends and family.**

## MAKE ENERGY-SAVING PLAYS

Now that you've conducted your energy audit, you're ready to reduce your energy use and carbon emissions. Which energy-saving plays will you adopt?

1. Unplug your cell phone charger and laptop charger when they're not being used.
2. Don't leave your cell phone plugged in once it is fully charged. This also helps protect your cell phone's battery.
3. Turn off energy-consuming items such as computers, LCD TVs, game consoles, and lights when they're not being used. To save even more energy, unplug them after you turn them off.
4. Set your computer to sleep mode when you're not using it.
5. Encourage your family and friends to use ENERGY STAR labeled products such as LED light bulbs and LCD TVs. Using [ENERGY STAR's Choose a Light Guide](#) can help them find which LED light bulb will work best.
6. Have your family and friends join you in adopting these energy-saving plays.

**After taking these actions, conduct the energy audit again to see how your energy use and associated greenhouse gas emissions have changed. Did they decrease? If so, by how much?**

\* This activity guide is for educational purposes and actual energy use may vary. Usage rates and standby power loads are aligned with those provided by [Lawrence Berkeley National Lab](#) and [Lawrence Berkeley National Lab's Home Energy Saver](#) tool.

