

## Background Information

Electricity is used by schools for lighting as well as powering computers, televisions and other devices, thus contributing to emissions of carbon dioxide (CO<sub>2</sub>), a greenhouse gas. Reducing the amount of electricity used can help lower CO<sub>2</sub> emissions. In this part of the Classroom Audit you'll take a look at how much energy is being used to light the classroom, power computers and other electrical devices, and also hunt for energy "vampires."

### Energy "Vampires"

Take a look around the classroom. In addition to classroom lights, what else is using electricity? Are there any computers, projectors, tablets, cell phones, or DVD/VCR players? Appliances suck up energy even when they are not being used—which is why they are sometimes referred to as "energy vampires." Vampires include devices with digital clocks (like DVD players) or internal remote control sensors (like some televisions), which draw energy just from being plugged in. Reducing vampire loads is as easy as plugging the appliance into a power strip and then turning off the power strip when not in use. Because computers and other electronics are usually put to good use during school sessions, this focuses only on what happens to electronic equipment **after** school hours to see how much energy is being wasted. In this part of the Classroom Audit, take an inventory of the different electronic devices and find out whether they are left on in "active" mode overnight, put to "sleep," or turned completely off.

### Lighting

Most classrooms are lit by overhead light panels, commonly equipped with 32-watt fluorescent bulbs. In conducting your audit, look for the number and type of bulbs powered by each light switch, as well as for any other lights that might be in the classroom (such as desk lamps). If you cannot find the wattage of the bulbs, use 32 watts as your default, or check with your custodian. Also, find out how many hours the lights are kept on during a typical school day.

### Heating

Keeping schools warm and cozy inside when it's cool outside uses a lot of energy, which in turn generates CO<sub>2</sub> emissions. Measuring these emissions and finding ways to reduce them can be challenging and depend on many variables. For example, the type of fuel used to generate heat, the number of windows, the quality of insulation, and the age and location of the school building all figure into energy use and related CO<sub>2</sub> emissions. Most of these are variables that individual students and teachers have no control over. One thing students and teachers **can** do, though, is adjust classroom temperature, if there is a controllable thermostat. For this category of the Classroom Audit, find out if the classroom has a controllable thermostat and, if so, to what temperature it is set.

No control? Classrooms without controllable thermostats cannot do much to influence how much energy they use for heat, but there are other ways to save CO<sub>2</sub> through simple behavioral changes. For example, closing and opening windows or doors can affect the amount of energy that classrooms use. Include some of these tips in your Action Plan.

### Transportation

How "carbon-ated" is your trip to school? Different ways of getting to and from school affect our climate differently. Some options, such as driving alone in an inefficient, low mileage vehicle, generate more carbon dioxide emissions than others, such as riding a bike, taking the bus, or walking. For simplicity, the Classroom Audit focuses just on how the teacher of your assigned classroom gets to and from school. (For the über-dedicated climate crusaders, you can assess the transportation choices of the entire student body by conducting the Transportation Audit.) Find out how far and by

what means your teacher travels to and from school each day. For teachers who drive, ask what kind of mileage their vehicle gets. If they aren't sure, ask for the make and model of their car and look it up at [www.fueleconomy.gov](http://www.fueleconomy.gov).

### **Solid Waste and Recycling**

According to the U.S. Environmental Protection Agency (EPA), about 4.4 pounds of waste is generated per person per day in the United States. Over the course of one school year (180 days), that adds up to 792 pounds of waste per person! Waste affects the environment in a number of ways, ranging from the greenhouse gases released after it's dumped in a landfill and the emissions associated with transporting that waste to the landfill, to the emissions generated just to produce that item in the first place. According to the EPA, each pound of waste produces roughly 1.75 pounds of greenhouse gas pollution as it journeys from your trash can to the landfill. Fortunately, there are many ways to shrink your waste—and greenhouse gas emissions—by reducing, reusing and recycling.

In this section of the Classroom Audit you will look at how much trash your classroom generates in a week. You will also examine whether wasteful habits are in practice—such as using only one side of paper for printing/copying, or drinking bottled water or coffee from a paper cup instead of using a reusable container. Just one large size paper coffee cup is responsible for one-quarter pound of greenhouse gas pollution. Another question to ask is does the classroom recycle? Americans use roughly 60 billion plastic bottles every year—nearly 7 million an hour—yet only one bottle out of every five is recycled. Filling a reusable water container or bringing your own mug helps reduce waste, save resources, and cut down on emissions.

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