

# OGS Energy Audit Tool Sheet

**Pre-Audit:** Ask the teacher to assign 2-3 “Energy Champions” who will report back to the group.

1. **Ask** the students what their habits are at home and at school. What are they told about turning off lights? What are they told to do after they are done with the computer?
2. Review **how energy is made** and where it comes from. Focus on Oregon’s energy sources. Have the students shake the manually powered **PGE flashlight** in the bag of tricks and discuss how electricity is created when the magnet moves back and forth through the coiled wire and creates friction. Electricity is caused by the instability of electrons. This same process occurs on a greater scale in power plants.
3. Do **jumping jacks** with younger kids to reflect on how their body temperature increases when they use their human-powered energy. Refer to how heat is a by-product of producing energy.
4. **Play “I Spy”** (be Energy Detectives) with items that are using energy, where energy is being wasted (ie. windows open), or where energy is being conserved (ie. weatherstripping on doors).
5. **Energy Walk-Through:** Walk around the school to see if unoccupied rooms have the lights turned off. Look at classrooms, the cafeteria, gym, library, overhead lights in hallways (note if some are turned off as a conservation effort) and the staff room (ask front office before heading in).
6. **Enlist the custodian** to show us the boiler room where hot water and heat is created.
7. **Computers:** Turn off computers when not in use for long periods of time. Demonstrate infrared heat sensor to show the heat computers put off.
8. **Lighting:** Demonstrate light meter. Discuss CFL versus incandescent (CFLs use 75% less energy and last up to 10 times longer than standard incandescent bulbs)
9. **Vampire Energy:** Use Kill-A-Watt on appliances and electronics (don’t forget vending machines if allowed) and compute energy costs (include those costs multiplied at the district level).

## **Basic Steps to Compute Energy Costs**

1. Find Watts: use the Kill-A-Watt device
2. Convert to kW:  $\text{Watts}/1000 = \text{kW}$
3. Calculate kWh:  $\text{kW} \times \text{hours of use in a specific period of time} = \text{kWh}$
4. Calculate cost:  $\text{kWh} \times \text{price per kWh} = \text{cost}$   
(In 2009, the District will pay an increased rate of 10.5¢ per kWh).

## **In Summary:**

**Watts/1000 x hours x price per kWh = Cost**

10. **Reflect** on what the students learned and where they feel they can save energy.

## **Repeat 3 most important points:**

1. Energy is everywhere!
2. 41% of our energy comes from burning coal, which contributes to Global Warming
3. That’s why we turn everything OFF when we are done with it!