School Appliance Inventory

Summary: Students design an inventory tool to assess the types and quantity of electrical devices found in their school.

Grade Level: K–12

Subject Areas: English Language Arts, Mathematics, Science

Setting: Classroom and throughout school

Time:
Several 50-minute periods

Vocabulary: Energy audit, Energy conservation, Leaking electricity

Major Concept Areas:

- Quality of life
- Quality of the environment
- Manage energy resource use

Related KEEP Activities:
Have students calculate the energy costs associated with computers and classroom lighting by conducting the activities "Cost of Computers" and "Light and Your Load."

Objective

By the end of this activity, students will be able to develop a survey to inventory the electrical devices found in their school.

Rationale

Students may look around their classroom and only see a few appliances or electrical devices, giving the impression that they do not use much electricity in school. By having students inventory the electrical devices used throughout the school, a greater appreciation of the energy needed to run a school should be realized.

Materials

- Copies of the ***Inventory Activity Sheet***
- Materials needed for students to share or report inventory results (e.g., poster board, markers)

Background

Refer to the activity "Pulling the Plug on Phantom Loads" for background information.

Procedure

Orientation

Ask students how many electrical appliances they think are in a typical classroom?

Steps

1. Discuss the term "inventory" and how to inventory electrical appliances in a classroom.

2. Hand out the ***Inventory Activity Sheet*** and have students conduct an inventory of all of the electrical appliances in their classroom. Tell them to write down any items that are not on the list in the spaces provided on the bottom. Caution students not to touch any electrical appliance without proper supervision.

3. Ask students how many computers they think are in the whole school building. How many refrigerators? SMART Boards® ?

4. What if all these appliances were left on when they could be turned off? How would that impact the school and the environment?

5. Tell students that they will be developing a survey for the other teachers in their school to inventory the electrical appliances in their classrooms. They should work in groups or as a class to decide the following:
   - What information do they want to know? (name of teacher, classroom number, etc.)
   - What information do they want to provide? (who is conducting survey, list of possible appliances, due date, etc.)
   - Who will deliver the surveys? (students or teacher)
   - Who will collect the surveys? (students or teacher)
   - How will they compile the inventory results? (graphs, charts, tables, written summary, etc.)
   - What will they do with the results? (put in school newspaper with suggestions on how to conserve electricity, read over school announcements, make posters and hang up in cafeteria, etc.)

Closure

After the surveys are complete, ask students what they learned in light of completing both this activity and "Is Your Classroom Energy Efficient?." Were they are surprised by any of the results?

Assessment

Formative

Did students develop, disseminate, and evaluate a survey resulting in an inventory of electrical appliances in their school?

Summative

Have students develop an inventory activity sheet for their home electrical devices? What will they do with their results?

Extension

Have students use Appliance Cost Calculators to determine the wattage of each of your classroom appliances. Search online for calculators provided by the U.S. Department of Energy or your local Utility company.

Have students use watt meters to determine actual wattage of classroom appliances. To borrow a classroom set of watt meters, contact the Wisconsin Center for Environmental Education's Hands-on Resource Lending program: uwsp.edu/wcee.

If you are interested in finding out how your school's energy efficiency compares to other schools of similar type in Wisconsin or around the U.S., contact your facility manager to inquire if your building has been assessed for an ENERGY STAR® score or another benchmarking study.

If your school would like to participate in benchmarking assessments, contact Focus on Energy's Agriculture, Schools and Government Program at focusonenergy.com.

Inventory Activity Sheet

Name _____ **Date** _____

Instructions
Complete the following table. Enter the quantity of each item found in your classroom. If there is an item listed that is not found in your classroom, write "0" in the quantity column. If there are electrical devices found in your classroom that are not listed below, write them in the spaces provided at the bottom of the table.

Name of Electrical Device	Quantity
Aquarium Filter	
Aquarium Heater	
Aquarium Light	
Aquarium Pump	
CD Player	
Cell Phone Charger	
Coffee Maker	
Computer (CPU and monitor)	
Computer (speakers)	
Desk Lamp	
DVD Player	
Electric Clock	
Fan	
Fax machine	

Name of Electrical Device	Quantity
Hot Plate (for cooking)	
iPod/Phone Charger	
Microwave	
Photocopier	
Printer	
Projector	
Radio	
Refrigerator	
Scanner	
SMART Board®	
Space Heater	
Television	

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