# SERT Scavengers

SERT Program
Department of Facilities Management
Montgomery County Public Schools
45 W. Gude Drive, Suite 4000
Rockville, MD 20850
240-314-1090

## School Energy and Recycling Team Overview

The SERT program promotes efficient and responsible energy use and recycling in all Montgomery County Public Schools. The program is implemented by a SERT team, made up of a captain, students, teachers, parents, building managers and staff. Schools practice environmental stewardship, actively participate in recycling and implement energy saving strategies to earn quarterly awards. SERT teams receive energy conservation and recycling resources and custom level support to implement their ideas for energy conservation and recycling.

Our program reinforces good energy behavior and encourages students to think "out-of-the-box" regarding energy conservation strategies that can be implemented at schools through the guidance of their SERT Team Leader. We provide outreach efforts in the recycling effort at each school.

The first step to setting up an active SERT Team is to form a club where students and team members can hold pre-scheduled recurring meetings to brainstorm energy savings and recycling strategies to implement them through clearly defined plans. This introductory packet should help to start this process in your school.

It is important to learn about energy use and energy waste to implement conservation strategies. Recycling is a mandatory program and is a great partner to energy conservation. Efforts to encourage recycling in the school can be a leadership opportunity for students. Learning about your school facility, the recycling station set-ups, and energy using appliances and equipment is a great start. Tour your school and take a basic inventory so you know what you are working with. (See the "Building Audit" and "Recycling Audit")

It is helpful to develop a mission statement and goal that gives your team something to strive for – a performance measure. Visit our website for your school's quarterly energy data and annual recycling rates (www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/recycling.html) There are many valuable resources for SERT teams on our website including: the SERT Handbook, Conservation Flyers, SERT forms, and current energy-conservation and recycling initiatives.

# Adult Sponsor Guide:
# After School SERT Club Activity

Once you have conducted your first SERT meeting with your students and they are familiar with the building, you may be looking for some fun competition. We have developed this activity to engage students in a hands-on, inquiry-based group activity.

Overview/Objective:

Students will calculate and compare the Watts being wasted in unoccupied classrooms after school by conducting a building audit with the "Data Sheet for Scavengers".

Time: Depending on the size of your school – 20 minutes to 1 hour
Activity can be scaled down by conducting the audit by hallways.

Materials: SERT Scavenger data collection sheets
Optional: Watt Meter - Contact your SERT Facilitator to borrow Watt meters
Pens/Pencils
Clipboards
Calculators

Background: Energy conservation efforts include behavior modification that can be encouraged through competition. Changes can be made in human behavior including, turning off lights, reducing the use of personal appliances, and turning off electrical equipment when rooms are unoccupied.

Suggested Approach

1. Discuss the background information with your group. Make the appropriate connections for this activity and the SERT mission.
2. Explain how the activity will be carried out. Will your group measure by wing, by hallway, by floor, etc. This is decided by the adult leader with time, age group, and facility layout in mind.
3. Have students carry out the activity and record their data. The data will be recorded on the Data Sheet for Scavengers provided. Through the use of a Watt meters or with information provided on the plug load survey data sheet, the students will measure the

4. Watts used by equipment, lighting and appliances left on in unoccupied rooms. The students should record the Watts, quantity and any recommendation or comments on the collection sheet.
5. The comments on the data sheet will provide triggers for the development of strategies that can be implemented to conserve energy in schools.
6. Discuss the results and implications of the activity with the group.
7. **Please note that adult leaders should be present to oversee and assist in the plugging and unplugging of appliances. Safety precautions should be taken as repetitive plugging and unplugging will take place in this exercise.** For younger students or groups without adult leader a survey data sheet can be used with Watts available.
8. The Watt meter cannot be used on lighting. We have included is a lighting worksheet that will help calculate the Wattage for the overhead lighting left on in unoccupied spaces.
9. When students return from auditing their wing/classrooms have them total the Watts and provide the group who conserved the most Watts by turning off what was found on with a certificate or prize.

For Discussion:

1. Which appliance was listed most frequently found on by the students? Which ones are listed least frequently?
2. What steps can you take as a SERT Team to inspire others to conserve energy?
3. Which classrooms waste the most amount of energy?
4. How much energy does it take to light a classroom over lunch hour? Are there rooms left on and unoccupied at your school during the lunch hour?
5. Do you think people at the school think about how much energy is used?
6. How can students save energy at school?

Ask your SERT facilitator for assistance.

| | | |
|---|---|---|
| Bethesda Area | Greg Williams | 240-372-2671 |
| Clarksburg Area | Arthur Hayes | 240-372-8553 |
| Randolph Area - | Jim Stufft | 240-372-8618 |

Don't forget to send your findings to the SERT office for credit towards a GEM Award.
Fax to 301-279-3005 or e-mail to Hillary_H_Kirchman@mcpsmd.org

# Data Sheet for Scavengers

Date: _____

Room/Hallway/Wing _____

Items found on:

| Appliance/Electrical Equipment | Wattage Average | Quantity | Comments: Room – Location - Recommendations |
|---|---|---|---|
| Boom Box | | | |
| Listening Station | | | |
| Scanner | | | |
| Computer CPU | | | |
| Monitor | | | |
| Printer | | | |
| Computer Accessory | | | |
| Copier | | | |
| Laminator | | | |
| Fax | | | |
| Fans | | | |
| Television | | | |
| DVD Player | | | |
| VCR | | | |
| Other Video | | | |
| Overhead Projector | | | |
| Toasters | | | |
| Mini-refrigerator | | | |
| Coffee Pot | | | |
| Microwave Aquarium | | | |
| Grow Lamps | | | |
| Other personal appliances | | | |
| TOTAL | | | |

# Classroom Lighting Audit

The first stop in approximating the opportunities for saving kWh and dollars on lighting is determining how, where and for how long lighting is used in the building.

## Classrooms

1. Determine the number of fluorescent bulbs in classroom:

_____ x _____ = _____
(# of bulbs per fixture) (Number of fixtures) (Number of bulbs)

2. Calculate Watts per classroom:

_____ x 25 = _____
(# of bulbs per classroom) (25 Watts per bulb) (Total Watts per classroom)

3. Calculate total Watts per day per classroom:

_____ x _____ = _____
(Total Watts per classroom) (Hours per day used) (Total Watts per day per classroom)

4. Convert Watts to kilowatts:

_____ ÷ 1000 = _____
(Total Watts) (Total kilowatts)

5. Calculate cost of lighting classroom per day:

_____ x $.13 = _____
(Total Kilowatts) (Total cost of lighting classroom per day)

6. Calculate cost of lighting all school classrooms per day:

_____ x _____ = _____
(Total cost of one classroom) (Number of classrooms) (Total cost for Lighting classrooms)