

SERT Mission Statement

The mission of the School Energy and Recycling Team (SERT) program is to significantly reduce energy consumption and increase recycling rates system wide through;

- Sustainability training and education;
- Incentives, recognition, and award programs for conservation;
- Accessible energy and recycling data;
- Individual school programs for energy and environmental investigation-based learning opportunities; and
- Conservation operations and procedures.

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ABOUT SCHOOL ENERGY AND RECYCLING PROGRAM (SERT)

Introduction
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“Energy may be the most important environmental issue of our time. If you think about nearly any other environmental issue—air or water quality, land use, transportation, global climate changes, or solid waste management, to name some examples—you will find that it is related to the issue of energy. Energy affects our lives every day. It keeps us warm in the winter and cool in the summer, affords us the freedom to travel to faraway places, and keeps our food fresh and safe to eat. Energy is not just an environmental issue; it is a quality of life issue, too.”

Reprinted with permission from Project Learning Tree. Energy & Society Energy Education Pre K - 8 Activity Guide. Copyright 2002, American Forest Foundation

This guide book is for students, staff, parents, and community – everyone supporting and participating in the Montgomery County Public Schools (MCPS) School Energy and Recycling Team (SERT) program. Our goal is to maintain a healthy and productive learning environment for faculty, students, and staff, while reducing energy, water, and other resources use along with actively participating in a comprehensive recycling program.

All MCPS schools are required to participate in SERT and to file a complete, executed, SERT Action Plan in September of every year (Form 201-10). Schools are challenged each year to save at least 10 percent in electricity usage compared to the pre-established baseline and to increase recycling rates to achieve at least thirty-six percent.

A school’s level of student participation and activity does have a direct impact on the amount of energy savings achieved and the percentage of recyclables captured. Active teams have proven to increase recycling rates by involving students in the program. Energy conservation and recycling are a joint responsibility shared by staff, students, community, and building service team members with strong support from the administration. Successful SERT schools develop a “magic triangle” which consists of three key components – active participation of the (1) school administration (2) school building service staff and (3) SERT leader and students. All MCPS community members, staff, and students should consider consumption habits and ask: “Is this a wise use of resources?”

It is our sincere hope that your school’s participation with SERT will result in a positive and rewarding learning experience for all involved.

SERT Conservation and Recycling Program Outline
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Fiscal responsibility and resource stewardship go hand-in-hand in ensuring that the MCPS operating budget stretches to cover all essential educational needs. Collectively we can reduce energy waste and preserve essential educational priorities.

Montgomery County demonstrates a strong commitment to preserving natural resources and protecting the environment through Executive Regulation 15-04AM, regulating nonresidential recycling and reporting requirements for collectors of solid waste and recyclable materials.

Participation in SERT is mandatory for all Montgomery County Public Schools

All schools must complete an annual SERT Action Plan and should achieve at least a 10 percent reduction in total energy use and at least a 36 percent recycling rate over the school year. The following outlines the program and the incentives the SERT program offers to help schools achieve this goal:

A SERT Action Plan designating key staff in conservation and recycling roles must be submitted on or before September 15 of each year. This deadline correlates with the mandated County Recycling Plan deadline.

Principals' support of the SERT team is essential to establish school-wide awareness, to promote environmental stewardship, and to ensure proper use of awards.

SERT facilitators and recycling staff are available to assist all schools with their SERT program. The SERT facilitators support school SERT team's efforts in energy conservation. The SERT recycling staff is available to support school SERT team's efforts in recycling responsibly. SERT facilitators and recycling staff are available to provide hands-on assistance with in-school programs and initiatives.

Annual SERT Energy Performance Awards and Great Energy Management (GEM) Awards

- Quarterly SERT awards are granted to the top performing schools that demonstrate savings against their pre-established baseline data. Awards are granted to the school principal; however, in the summer quarter (June-August), the award is directly credited to the building service supply account for each winning school.
- Energy performance awards will be withheld from schools that have a county recycling grade of D or less. Support from a recycling specialist will be made available to assist schools achieve

a successful grade in the recycling program. Each school that does not achieve a passing grade will be re-inspected and re-graded after significant efforts are made to improve the program with support from the SERT program. By bringing up their grades the schools will then be eligible for SERT awards.

- In consideration of schools that do not have a pre-established baseline, SERT will grant quarterly awards to select schools demonstrating Great Energy Management (GEM) behavior. GEM awards are based on observed conservation practices and data collected by the SERT facilitators during unannounced school visits.
- Schools are eligible for recycling rewards when they recycle at a rate of at least 36%. Schools are rated based on performance data, participation, and recorded observations made during site visits

SERT Web Site

Montgomery County Public Schools - School Energy and Recycling Team Program

The SERT program maintains a comprehensive website, www.greenschoolsfocus.org which provides schools with up-to-date news, educational opportunities, field trip suggestions, activity ideas, links to fun energy and recycling websites, and SERT activity packets. Schools can also access their quarterly energy, monthly recycling data, and monthly solid waste reduction report on the website to monitor their progress.

Classroom Materials

Every year, the SERT program provides assistance for teachers at elementary, middle, and high school levels who want to integrate energy and

water-related concepts and topics into their on-going classroom activities. Our objective is to help students understand the implications of energy use and savings, as well as how the SERT program relates to larger issues of global environment and energy security. SERT program staff conduct trainings, visit classrooms, performs classroom size elementary assemblies, host student contests, provide on-site assistance with tools to analyze energy use and provide recycling support.

Professional Development Opportunities (PDO) Training

SERT hosts two PDO SERT Leader Success Training sessions for interested MCPS staff each school year. Our goal for this training is to guide participants into learning about promoting a culture of conservation in their schools. The training provides attendees with a basic knowledge of the SERT mission and program resources available to schools. SERT provides promotional material, contest information, hands-on activities, posters, stickers, website resources, recycling resources, and demonstrations of the energy-analysis tools for participants to experiment with and take back to schools to engage staff and students. Participants will complete the training with an understanding of SERT and the resources available to all schools to support active SERT programs at each school.

School SERT Team

An essential common factor for successful SERT schools is that they model a coordinated team effort that is coined SERT's Magic Triangle. The SERT Magic Triangle is composed of the



school's administration, building services staff, as well as the faculty, students, and community. A collaborative effort with clear roles and expectations fosters a successful SERT program. Open communication among all members of the triangle provides a clear pathway for successful conservation. . Strong support from each side of the triangle is a proven model of success. Here is the first step:

Assemble a dedicated team

Team members do not have special skills or talents; they just need to be willing to contribute and participate. Teams should include students who will have unique approaches for involving other students and staff. Teams should include a member of the building services staff and at least one teaching staff member. The team members' commitment to a culture of conservation as well as an understanding of the importance of open communication will lead to a successful program.

Give the SERT leader authority

SERT is not about fancy gadgets or magic devices; it is about influencing people's behavior and encouraging them to participate in conservation and recycling efforts. Having the principal's visible and continuing support concerning energy and recycling issues can go a long way in encouraging people to change their habits. Support from the administration sends a strong message that promotes active participation in your school's conservation efforts. Leading by example and promoting a culture of conservation is a great start for all administrators.

Produce a cooperatively written SERT Action Plan

Lee Iacocca said, "The discipline of writing something down is the first step in making it happen. Give ideas life by committing them to a written plan." Brainstorm to find new and innovative ideas that will work for your school and

fit your needs. Develop the ideas into priorities for immediate action. Utilizing time-management skills and meeting agendas, action plans, and other organizational devices can help keep your team on track and moving forward.

Make reasonable deadlines

Time-management matters – Set achievable goals and deadlines and remember the following:

- If you want to get it done, plan it
- Failing to plan is planning to fail
- You can always change your plan (please take the time to make one)

Meet monthly to evaluate performance

Follow up on activities. Revisiting plans and assessing resources needed to carry out your various strategies, plans, and activities can help maintain the drive that keeps your plan active and engaging. Committing to your plan, documenting the actions, and evaluating the strategies can help the team achieve its goals.

Activities for Student SERT Teams

Schools participating in the SERT program have many activities to choose from and/or can create their own ideas to increase savings and recycling rates. Activities for SERT teams can be found on the SERT website, www.greenschoolsfocus.org.

Activity packets, energy games, electrical and recycling audits, brief constructed responses (BCRs) and/or student work regarding energy conservation and recycling should be sent in to the SERT program office for our “active” school files. These files demonstrate a school’s activity level to qualify for several awards that are granted annually.

Most schools in the SERT program have some sort of conservation management program in place. This program may include removing unnecessary

lighting, keeping lights and computers turned off when not in use, managing summer air conditioning, establishing locations for recycling bins or centralized stations, and keeping their energy management (EMS) calendar up to date. In addition, some schools also pursue a SERT program that includes students who creatively approach energy and recycling awareness and develop dynamic campaigns to spread the word on energy savings and recycling rates.

The Green Team students at Walt Whitman High significantly improved their recycling grade from a D to an A by setting up centralized recycling stations, which included bins clearly marked for cans and bottles, paper, and trash on every floor. The Environmental Green Club purchased bins for the cafeteria and outside for sporting events.

Establish Recycling Rangers, Computer Captains, and Energy Emissaries

SERT teams that assign recycling and energy monitors in each classroom provide leadership opportunities for students. See “3 Green Things” an elementary level SERT activity that supports Curriculum 2.0 <http://montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/3greenthings.pdf> Modeling behavior for others to emulate is a great way to start a culture of conservation in your school. Rotating these positions so all students can participate will help achieve the energy savings and recycling rate goals as well as provide students with a sense of accomplishment. The diversity of groups in our schools helps each school identify its recycling team. Some examples of groups recycling at our schools include the Environmental Club, Leadership Program, School-Community Based, Learning for Independence, Student Government Association, and the like. Promoting a culture of conservation can be a great focus for groups looking for a mission.

Team inspiration through “Green Ribbons”



The Student Government Association liaison at Damascus Elementary School charged the SERT team with the responsibility of educating fellow students about energy conservation. In addition to posting posters, light switch covers, and labels for

computers, they implemented a new program called the “Green Ribbon Award.” This program allowed students to rate their classrooms weekly on how well each room was conserving energy and resources. Once they were rated, the classes became eligible for a green ribbon and a leaf (with the class name on it), to be added to the green ribbon tree bulletin board in their main hall. The class with the most ribbons at the end of each quarter received a plant to decorate their room or plant outside during spring.

Measuring light levels and delamping where possible

At Rock Creek Valley Elementary School, students worked with building service staff to take measurements of actual light levels in hallways and classrooms. They found much of the school was overlit. Lamps were removed and light levels, while lower, were still above the MCPS standard. Most important, staff and students didn’t notice the differences after delamping. The school saved 5 percent in electricity consumption and was awarded \$1,000 in the second and third quarters for good conservation behaviors.

Finding the “Win-Win” solution

The assistant principal at Redland Middle School used the energy data and SERT program to develop her black belt project for Six-Sigma. Having the support and direction of the administration at Redland helped them to increase their savings. By outlining an energy conservation plan, developing strategies for students and staff, monitoring small

appliances, and celebrating their accomplishments, this approach reduced energy use at Redland Middle School.

Listening to your students and letting them lead

At William Tyler Page Elementary School, Green Team students and staff hold bimonthly lunch meetings with their principal. During these meetings, they discuss strategies to conserve energy and reduce energy waste. Each meeting brought about new and innovative ideas that led their school to dramatically decrease its energy usage. At the end of the school year, the students were very proud of their Green Team and their accomplishments. By utilizing their SERT awards, the school was able to schedule a fun recycling assembly, led by a professional entertainer. Promoting awareness through school assemblies reaches all students and staff – and is a lot of fun!

At Montgomery Blair High School, the Green Team conducted an audit of their recycling infrastructure and observed that some of their bins designated as recycling bins were gray in color thus creating confusion. To be uniform and to avoid any confusion between recycling and trash bins, the gray recycling bins were replaced with blue recycling bins with properly designated labels.

Students creating an original message

At Cedar Grove ES students participate in all the SERT activities in their school. Individual teams are assigned to help at the end of their lunch period to work with recycling, or terracycling, or energy conservation. The school has a display of the progress of the teams. The whole school shares in the success that they have been able to achieve.

S. Christa McAuliffe Elementary School has an effective way to remind students and staff to turn off lights when not needed. Student-created designs are laminated and placed in each classroom. Each reminder is unique and students proudly show off “their” sign at Parents Night. There

is the added bonus that each art class becomes invested in the message of school conservation.

Peer teaching and Student Service Learning Hours (SSL)

High school and middle school students can work with feeder elementary schools to assist younger students with their “Watts Up? Energy and Recycling Awareness” annual poster contest submissions. All schools are eligible to enter this poster contest, where students are charged with creating a peer-to-peer message on energy conservation and responsible recycling through hand-made or digital posters. Secondary students can also volunteer at local elementary schools to assist the SERT leader in running an after school SERT club.

Use data to track SERT success

The Glenallan Elementary School G.E.T.T.E.R.S Club consists of fourth and fifth grade students and staff who wanted to make a difference at their school. By identifying and correcting wasteful energy practices, the G.E.T.T.E.R.S saved 22 percent in electricity use over the 2006–2007 school year. A data chart that tracked the conservation progress was prominently displayed in the school. This served to increase involvement for all students and staff and educate school visitors and parents about the program.

SERT Contests

The SERT program sponsors contests for MCPS students at all grade levels throughout the school year.

Lead by Example—Energy and Recycling Awareness Campaign

At the high school level students are charged with developing a comprehensive campaign to increase

energy conservation and recycling awareness throughout their community and school. Successful strategies developed in high schools are shared with other schools, published on our website, featured throughout the SERT Best Management Practices Handbook, and celebrated in The Bulletin.

As Seneca Valley High School students have stated:

“We Must Do Better!”

By simply providing more recycling containers, labeling them, and producing public service announcements for their morning announcements, Seneca Valley High School is increasing its recycling rate.

Watts Up? Energy and Recycling Awareness Poster Contest

All schools can participate in the SERT Watts Up? Energy and Recycling Awareness Poster Contest. Students are challenged to submit hand-made and/



Digital poster submitted by Northwest HS

or digital posters promoting wise energy choices and responsible recycling. Winning posters that are graphically reproducible are reprinted by MCPS Editorial, Graphics & Publishing Services (EGPS) and distributed systemwide to increase awareness.

Select winning posters are publicly displayed in Montgomery County at various public venues during the summer months. After a judging panel selects the winning posters in each category, they are then posted on our website, and those students receive “special” certificates and promotional items recognizing them for their efforts. Personal visits are made by the SERT program staff to deliver these



Hand-made poster submitted by Gaithersburg MS

awards. Recognizing the students and schools who actively participate in the SERT program is an important part of fostering the relationships that are key to the success of the SERT program. Celebrating the Success!

Recognize Effort and Promote Your Program

The SERT program is like any good habit, you have to keep up your effort every day. Keeping people motivated is very important to the success of the program! Recognize and reward individual and team effort with certificates, awards, and greater responsibilities.

SERT teams have used everything from tie-dyed T-shirts, hats, ribbons, buttons, and aprons to identify the students in their green teams. Contact the SERT program office to learn about other ways to promote your team’s conservation efforts or to receive Certificates of Appreciation for special recognition at your school.

Promote your program within the school with morning announcements, newsletter articles, and flyers. Ask for support and assistance from your PTSA and community user groups. Their energy use and recycling efforts will affect the entire school.

SERT publishes a monthly SERT Flash to promote and share school projects. Your team can be featured in a SERT Flash by contacting the SERT

office with your stories and ideas, so we may highlight your school’s program. SERT Flashes are placed on the SERT website and sent out to all schools each month.



Frequently Asked Questions

General

- Q. How are SERT awards determined?**
- A. SERT awards will be based on one of the following two performance criteria: (1) verifiable energy savings and (2) observed energy efficient behaviors. The energy savings are verified through energy bill analysis. Great Energy Management (GEM) awards are nominated and verified by your school’s assigned SERT facilitator or other SERT program team members as part of site visits. These visits may take place during school hours, after school, or in the evening. The SERT team should keep meeting notes or minutes to fax or Pony to the SERT program office for inclusion in your active school file. Schools with a rating of D or less in recycling are not eligible for third-quarter energy performance awards. A recycling specialist will be made available to schools that need assistance with their recycling efforts.

Q. What can I do with my awards?

A. SERT award funds should be spent on materials and services that further the environmental goals of the program. Stipends for eligible employees attending training or leading an after school SERT club are appropriate uses of award monies, as are t-shirts or other team building identification for students. SERT award monies can also be used for recycling supplies. For further ideas on how to spend your SERT money, please contact your SERT facilitator or visit our website at www.greenschoolsfocus.org.

Q. What other assistance is available to help my school implement additional ideas and efforts?

A. The SERT program provides training (open to all MCPS schools at the beginning of each school year) to support their SERT team. Throughout the year, the SERT facilitators will visit your school to provide advice and hands-on assistance with energy conservation and recycling strategies. The SERT program tracks the energy consumption of each school and shares that information periodically with principals, SERT leaders, and community superintendents. In addition, the MCPS offices of Energy Management and Division of Maintenance will address temperature issues related to a building's heating and cooling, both during and after school hours.

Q. What can schools do to conserve resources when outside groups also are using the building?

A. With the growing needs of our communities, our schools are operating long into the evenings and weekends year round. Before- and after-school programs, adult night education courses, community meetings, and weekend activities are just a few of the activities that take place. Additional usage of the buildings parallels an increase in energy and water consumption and provides additional opportunities to promote conservation and increase recycling rates. This can be an

opportunity to build wider awareness of the school's efforts to conserve resources and save taxpayer dollars. To spread the word, SERT teams should post special notices in areas most used by those groups. Organize a meeting with your local community cluster to discuss strategies to promote recycling and conserve energy and water during after- school hours. Let community users know that their use of excessive lights or practices of leaving outside doors open when the building is being heated or cooled directly impacts your school's energy consumption. You'll find more people willing to cooperate if they are made aware of your goals. Consistent and clear communication is one of the main keys to a successful SERT program.

Heating and cooling**Q. Who controls the operating schedules for heating and cooling in my school?**

A. Two basic methods are used to control the heating and cooling in MCPS schools. The most common method is through computer-controlled energy-management systems. A calendar of your school's monthly activity (normal school hours plus evening community use) is used to determine the operating schedules for the heating and cooling systems. If there are any changes to the schedule, Energy Management Systems (EMS) must be contacted to make the appropriate changes. Some schools are not directly linked to the energy management system. In those cases, the building service manager has direct control of the heating and cooling equipment. Either situation provides opportunities to clearly align heating and cooling operating periods within the school through conscientious scheduling. Consolidation of after-hours use of the building into one heating/cooling zone when possible promotes conservation and reduced energy consumption.

Q. What are the correct temperature settings for heating and cooling?

A. The standard MCPS temperature setting during the heating season is 70°F. The standard temperature setting during the cooling season is 76°F. Everyone has his or her own comfort level at different temperatures, especially at different levels of relative humidity. How comfortable you feel depends on your physical ability to adjust and how appropriately you are dressed for each season. Layering clothes keeps you more flexible.

Q. What should I do if I see examples of waste?

A. If it is as simple as turning off the lights, just do it! Be proactive and help everyone by modeling energy- aware behavior. Use these opportunities, when appropriate, to educate others.

Q. Are electric space heaters allowed in the school?

A. Electric space heaters are against MCPS policy. These units, in addition to having high energy costs, are a fire and safety hazard. Only heaters installed by the Division of Maintenance for emergency use will be permitted; others will be confiscated. For alternatives, contact your SERT facilitator at 240-314-1090.

Q. What can I do if the room is too cold/hot?

A. If your room temperature is uncomfortable, measure the actual temperature first and then call the building service manager. If necessary, have the thermostat setting checked. Also, check to make sure the unit ventilator is not blocked. The area on top with the vents and the bottom of the unit need to be clear. If either top or bottom is blocked, then it will waste energy and leave you more uncomfortable. Space heaters are not allowed in the school building and can corrupt the thermostat readings. Collect information on actual temperature and thermostat readings before you contact Energy Management Systems. Opening windows can exacerbate the problem and should be avoided, unless absolutely necessary.

Lighting**Q. In our school, what is the biggest consumer of energy?**

A. The biggest consumer of energy is heating ventilation and cooling, followed by plug loads, and then lighting. The heating/cooling system stays balanced by keeping doors and windows closed. Plug loads, like personal refrigerators, computers and printers, and lighting, are the loads that can be easily controlled by shutting things off. Turn it off!

Q. Does it actually cost more to turn the fluorescent lights off for a minute than to leave them on?

A. No! Modern fluorescent lamps are "rapid start" or "instant start." Once you turn them off, you will start saving energy immediately. There is no appreciable increase in energy use to start them again. So the next time you say, "I'll be back in a minute" and then return 20 minutes later, consider how much you could have saved by turning off your lights!

Q. Will I really save energy if I remove a light tube from a fluorescent fixture?

A. Yes! The electrical current to remaining tubes increases marginally (a watt per tube), but electric consumption is reduced by 40 watts per tube on the older T-12 system, and 25 watts on the newer T-8 lights for each one removed. Call your SERT facilitator to borrow light meters to check areas that you feel may be overlit.

Q. Will I burn out the ballast if I take a tube out of a fluorescent light fixture?

A. Your ballasts will NOT burn out by removing tubes. A ballast is an electrical component used in fluorescent lighting systems. The manufacturer's design engineers state that heat from electrical current degrades the ballast. With less current, there is less heat, thus less wear. Ballasts do fail for a variety of reasons, but not because a tube was removed.

Q. Why do I see some teachers working in their rooms with just a desk lamp on?

A. These teachers are participating in energy-saving strategies recommended through their SERT team. These lamps are used when students are not in the classroom. Task lamps provide enough illumination on a desk to take care of daily administrative duties and paper work without lighting the entire room when students are not present. The task lamps are easy to place on a desk or work station and are a great energy-saving alternative for those who need light at their desk, but not the entire classroom. We encourage task lamp usage during periods when students are not in the classroom (lunch, rotation, after school, etc.) To calculate your savings, multiply the number of light fixtures in your room by the number of lights in the fixture and then multiply by the wattage of the bulbs. Compare this number with the task lamp, which uses 23 watts of energy.

Task lamps can be ordered through FMS along with compact fluorescent light bulbs. Contact the SERT office for recommendations.

Computers

Q. Will I kill my computer or software if I turn off the computer?

A. Always follow the procedures to exit your software programs before shutting down your computer. The general rule of thumb for the components is to treat your computer as you would your television. Why leave a TV on when no one is watching? If you are having problems with your computer, it is most likely due to a hardware or software glitch, not anything to do with turning the computer off. The most energy is used by your monitor, so if you are really just going to be gone for a short time, turn the monitor off and leave the computer on. If you are gone longer than five minutes, turn it all off. These days, restarting your computer often is more beneficial than harmful. Remember the most frequent computer fix when you ask IT staff - "Did you restart it?"

Q. How much energy does a screen saver save?

A. None! The screen savers prevent the monitor screen from burning in an image displayed over a long period of time. But that does not save energy. Sleep programs, which darken the screen, actually do save energy and should be enabled on all computers so equipped. The most energy is used by your monitor, so if you are really just going to be gone for a short time turn the monitor off and leave the computer on.

Recycling

Q. How do I order new bins?

A. Contact your in-school SERT/recycling coordinator. When central funds are available, the building service manager can order the bins through the Maximo work order system. Instructions on how to place these orders with information on the various types of bins can be found on our website. Schools are encouraged to use SERT funds to order bins available through FMS. Please contact the SERT recycling manager or recycling technician if you need assistance in ordering.

Q. How do I order recycling labels and posters?

A. Contact your in-school SERT/recycling coordinator or building service manager. Labels and posters can be obtained by sending an email to recycling@mcpsmd.org or by contacting the SERT office.

Q. What do I do with recycling material that is contaminated?

A. If you find a recycling bin with food or spilled liquids (cans, milk, etc.), then this recycling material must be placed in the trash. To avoid contamination and increase your school's recycling rate, please make sure that there is a trash receptacle next to all recycling bins. This allows our building occupants to dispose of recycling and trash properly. To reduce contamination, consider using restrictive lids for recycling bins (available through Maximo-Grounds). Please contact the SERT recycling

manager or recycling technician if you need assistance.

Q. How do I access my school's recycling data?

A. Please visit the SERT website to access your data. <http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/data.shtm>

Q. How is my percentage figured out?

A. As recyclable paper/cardboard and bottles/cans are picked up at each school they are weighed. The school's trash weight is calculated based on the school population, with an allowance for recycled materials. A formula is used to determine percentages based on these two weights.

Q. What is the difference between the letter grade we receive and the recycling percentage?

A. Letter grades are determined by a Montgomery County inspector, who visits your school to conduct a site inspection. Maintaining your recycling program by providing recycling bins next to every trash can, having adequate size and quantity of recycling bins, avoiding contamination in the recycling bins, posting adequate signage, encouraging active participation in the program, are likely to improve your grade. Keep up the good work and ask for help from the SERT office if you need assistance to help improve your grade.

Q. If my school receives a failing grade what should I do?

A. Please contact recycling@mcpsmd.org for assistance. The recycling office will provide your school with specialized assistance to improve your grade. Remember that the third-quarter SERT energy performance awards are tied directly to the recycling grade. If your school receives a "D" or lower in recycling, the energy performance award will be withheld. We will make every effort to help raise your grade to ensure your school will receive any

awards due. Every attempt should be made to secure a passing grade by encouraging staff and students to recycle and reduce contamination. Ordering bins to support your school's efforts is the first step in promoting and succeeding in your recycling efforts. Classroom bins and centralized stations placed in main areas and hallways with proper signage is a recommended practice. Don't forget to include students, staff, and leadership in the recycling program.

Q. Who do I contact for answers to questions about recycling?

A. Please e-mail your questions to recycling@mcpsmd.org. Several staff members have access to this box and will direct your question to the recycling team to help you.

Q. If a beverage is not fully consumed, what should my students and staff do with the remaining liquid?

A. Our new slogan is "drink and drop." One way to help keep liquids out of the trash is to provide a bucket next to the new milk recycling containers in the cafeteria to encourage students to completely empty their containers before recycling. Four percent of our trash (more than 450 tons a year) is liquid. By consuming the liquids or keeping them out of the trash, we can save the school system unnecessary costs in trash disposal. Obviously encouraging students to drink to the last drop prior to recycling is the best solution.

Q. What should I do if I suspect my recyclables are not being recycled?

A. The first step is to discuss your particular situation with your in-school recycling coordinator and building service manager. If your problems cannot be resolved within the school community, building service manager should contact the recycling team at recycling@mcpsmd.org or by calling the SERT office.

Q. What should the focus of my efforts be in recycling?

- A. Fifteen percent of our trash is recyclable papers. All school occupants are part of the recycling program. Encourage 100 percent of your school's community members to participate 100 percent of the time in recycling 100 percent of their paper.

Q. What if my school is recycling other material?

- A. If your school is participating in terracycle program or is currently recycling other than paper, bottles/cans, metals or yard waste, please utilize MCPS Form 201-9 to report back to SERT office. Your school will receive credits in your active school file and the SERT office will include such efforts in its reporting to Montgomery County Division of Solid Waste Services.

Q. Why do we use Styrofoam? Do we recycle Styrofoam?

- A. Currently, only Styrofoam products are provided by our vendors. Unfortunately, there is no local facility for recycling Styrofoam. Styrofoam takes up a lot of space but is very light, so it is not economical to transfer it to the existing recycling facilities in Georgia, Florida, and Massachusetts.

Q. My school is doing a great job and I want to share our strategies. How do I let others know about what we are doing?

- A. Please send an e-mail to the SERTInfo folder, which is a public conference folder accessible by all schools. Visit this folder through public folders (conferences, departments, facilities) to learn about what others are doing and for the latest information on recycling initiatives. Some of these great strategies we publish on our website and submit to The Bulletin.

SERT School Data Charts

The SERT program office publishes each school's energy use and recycling data on our website quarterly. Follow the link on the side navigation bar on the main page to Energy and Recycling Data (www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/data.shtm).

Step-by-step instructions are available to access each school's quarterly data. Below you will find samples of both the Energy and Recycling Charts. Please create a short cut on your computer for quick access.

ENERGY CONSERVATION AND RECYCLING STRATEGIES

Lighting Strategies

One third of the energy used in your building comes from lighting. Energy consumed by lighting is the easiest to modify without any major expense. First, we have direct control at the switch. We can use the switches to control banks of lights in classrooms, halls, and so on. Second, we can control how long the lights will operate. Third, we can simply remove selected lights from the fixtures to control the amount of light in an area. How far you decide to modify your lighting system depends on your school's particular lighting system and conditions.

Turn off the lights, turn on the savings

Turning off the switch is the easiest saver. The potential savings from turning off the lights is very high, while the inconvenience is minimal. The entire school can proactively model this conservation action. Consider turning off lights in hallways that have large window areas. Also, check the bank of lights in classrooms along the windows as well as school entry areas where there is an abundance of natural light.

How SERT Patrols work

SERT Patrols work very effectively with elementary students. It is easy, action oriented, and the children have a lot of fun. Under the direction of a teacher and armed with SERT patrol activity packet, the students check for unoccupied rooms where the lights are left on. They leave tickets to remind classmates, teachers and staff to turn off the lights and equipment after inspections. Some SERT patrols leave a happy face recognition ticket where they find the lights turned off. There is a classroom

checklist and a certificate that can be used to celebrate consistent energy aware behavior. Students can also check computer monitors and other equipment left on when not needed.

Implement a daily check to turn off unneeded lights. It is a good idea to schedule a light patrol before lunch and after school including the portable classrooms. Visit our website and find SERT Patrols for a turnkey packet with a checklist, certificates, and reminders.

If you need help to start a student SERT patrol, check our website or call our office for assistance, 240-314-1090.

Floor lighting in computer labs

The SERT patrol students at Oak View Elementary School have transformed their computer lab into an energy-efficient model classroom. They agreed to turn off the overhead lights and turn on ten floor lamps provided by their SERT facilitator. This energy-saving strategy was developed by Kevin Smith, a retired teacher at John T. Baker Middle School, and is being used throughout the system in school computer labs. Contact your SERT facilitator to analyze your school's computer labs for floor lamp use. These lights provide ambient light that eliminates computer screen glare and reduces the overall light level to a computer room standard. These fixtures are provided free of charge to participating schools. Compact fluorescent bulbs can be ordered through I Procurement. The critical component in this energy-saving equation is your commitment to turning off the overhead lighting when using the lab.

Switch to habits that save— use multiple switches effectively

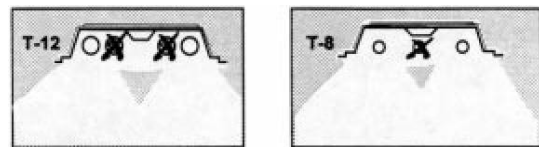
Wherever possible, use the correct area’s light switches to control the banks of lights that are needed. Experiment with the switches to see how they control the lights. Select the area that is being used and turn on the lights only for that specific area. Why light up the back wall when everyone is facing forward? You can use this simple but effective technique if there is adequate natural light to get the job done.

Delay the costs— keep it off until needed

In the old days when energy was cheap, we would enter an empty building and immediately turn on all the lights. At 6 a.m., everything was on and ready to go. A more efficient habit is to delay turning on the lights in vacant parts of the building until people arrive. You may be able to save an hour or two of lighting use every day, without inconveniencing anyone. Turn it on when needed. Turn it off when you do not.

Delamping

In most of our classroom light fixtures, there are one to four individual fluorescent lamps. Depending on the types, you can remove some of the lamps while keeping the others on. Which pair to take out simply depends on which appears best to you. On the newer, skinnier lamps (T-8), the manufacturer recommends no more than one lamp be removed from the fixture. Of course, you can also remove all the lamps in a fixture if the light is not needed. Have an electrician disconnect the ballast if you are sure the light will not be needed.



Rules for Delamping

- Do not compromise health, safety, and security

- Do not take lamps out of new fixtures under warranty
- Do consider people’s needs
- With T8 systems, do not remove more than one lamp per fixture
- Keep minimum light levels

Where would you delamp a light fixture?

Delamping is possible anywhere there is a fluorescent light fixture above an area that is not being used for active reading and writing or in areas where there is more light than needed. This could include the following areas:

Classrooms

- Along windows
- Around doors, corners, and coatrooms
- Over computers, televisions, and equipment
- Over play areas
- On desk surfaces for reading (30 to 50 foot-candles required)

Hallways / Stairways

Around windows, skylights, and corridors off the main hall, hallways should have 10 to 20 foot-candles (lumens). Light meters are available for loan to SERT teams from the SERT office.

RECOMMENDED FOOT-CANDLE (FC) LEVELS FOR VOLUNTARY SERT DELAMPING PROJECTS

Corridors and Stairways	10 –20 fc
• As low as 10fc – for high reflectivity flooring/walls (white or pastel)	
• Up to 20 fc for dark-colored flooring	
Conference Rooms	30 fc at table height
Reception Areas	20 fc (avg. ambient)
	50 fc (on task surface/desk)
Classrooms	30 fc (reading/ writing)
Art class	75 fc (preferably natural lighting)
Computer labs	15 fc
Restrooms	15 fc
Gyms	30 fc
Cafeteria (seating area)	30 fc
Cafeteria (food prep area)	75 fc

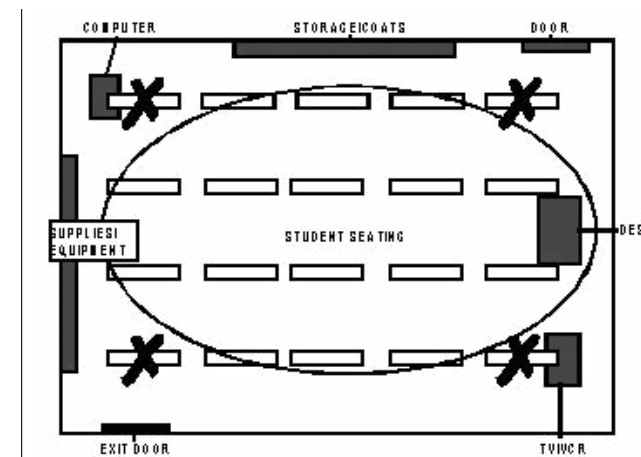
Customize your classroom

When a lighting system is designed, the entire floor area is usually covered end-to-end with an equal amount of light. When we customize the lighting, the idea is to put light where it is needed, and delamp where light is not needed.

There are no standard rules for customizing classroom lighting. Flexibility is the key. Every teacher will set up the classroom to meet their style and methods. Furthermore, every teacher will need a different level of lighting for comfortable vision. Customizing works best when the teacher and the building service manager work together to find the best solution.

One building service manager came up with the idea of mounting cardboard on a pole in order to block out the light from a light fixture. That way he could go around the classroom with the teacher and select specific fixtures to delamp. The teacher could see how the classroom would look without any guess work.

As shown in the example room, you can delamp easily over doors, computers, TV/VCR, and storage areas. Keep the lights over the student’s study areas where they will be reading and writing. Here, you want about 30 foot-candles. An added benefit of delamping—if conditions change, the lamps can be replaced easily by in- house staff.



Eye to Eye... and After Class

Young healthy eyes are able to adjust to a wide range of light levels without difficulty. As people age, their eyes become less flexible with varying levels of light and detailed work becomes harder. Keep this in mind as you ask teachers to delamp. What may be appropriate for one person may be unsuitable for another. Consider task lights with compact fluorescent bulbs (CFL) at work areas to increase light levels at the work surface. Lighting consumption after regular school hours can be greatly reduced if teachers switch off overhead lighting and rely instead on “task” lighting, like a desk lamp. For good measure, equip that lamp with a CFL rather than incandescent light bulb. Energy-efficient lighting design today should be about 1.5 watts per square feet. With modern technology that could come down to 0.9 watts per square feet.

I Can See Clearly Now...



Dirt and dust can reduce the output of your lamps by as much as 20 percent annually. Keep the lights their brightest by cleaning the light fixtures, diffusers, and tubes. Normal maintenance procedures call for an annual cleaning but, depending on room conditions, more frequent cleanings may be called for. Diffusers are the plastic covers over the lamps. Over time, the diffusers can turn yellow/brown and significantly reduce light output. Unfortunately, this discoloration cannot be cleaned off. For safety, the diffusers should not be discarded leaving the fluorescent lamps exposed. Try relocating the yellowed diffusers to another fixture where lighting is not critical. Delamped

fixtures would be a good place to locate yellowed diffusers. Put the newest and the brightest diffuser where good-quality lighting is most needed.

Gym and outdoor lights

Your gym may have metal halide or mercury vapor lamps instead of fluorescent lights. It is not practical or recommended to turn mercury vapor lights on and off for short intervals because these lamps need a few minutes to relight. The best SERT strategy is to schedule when the lights are turned on and to control the number of banks used with the switches. Mercury vapor lamps consume 200 to 400 watts each (depending on the type), so the potential savings from controlling these lights is very significant.

Ensure outdoor light controls are working properly. Some outdoor lights are controlled by timers or photo-electric cells. With the timer controls, make sure they are set correctly, according to changes in seasons. Also, be sure to check if your timers can be affected by a thunderstorm. Photocell-controlled lights that are on during the day indicate that the sensors have failed.

Outdoor lights that are left on during the day are a complete waste of energy. They also announce to the community that we are not being careful about energy use. Fortunately, this is an easy problem to spot and correct. It just takes developing an eye for seeing energy waste.

MCPS utilizes digital time clocks designed for exterior lighting throughout the system. These electronic clocks have digital accuracy, daily sunrise/sunset adjustments, 7-day capacitor backup for power outages, and can download programming from a notebook PC. This will save hundreds of thousands of dollars each year. These new clocks will alleviate some of the mechanical and operational problems we have experienced with the original clocks, resulting in increased efficiency.

Latest research shows that night time security is

improved by eliminating outdoor lighting or tying it to motion sensors. MCPS policy also requires parking lot lighting to be turned off between midnight to 5:00 a.m. Talk with your SERT facilitator about adjusting the exterior lights at your school. Check to see if your school has updated their time clocks. If not, please contact your SERT facilitator to discuss the installation.

Electric lighting

Rooms with no natural light: Post “lights off” signs in rooms that are not always occupied and have no windows, like restrooms, storage areas, gyms, and copy rooms. In some cases, occupancy sensors may make sense, so the lights turn off automatically. Check with your SERT Facilitator.

Areas with natural light: These are the electric lights that do not need to stay on all day and waste energy, because once the sun is out people do not even notice that they are on anymore. These areas are often stair cases, perimeter hallways, classrooms, lobbies, offices, media centers, and cafeterias. Changing switching from key switches to toggle switching in all purpose rooms and cafeterias can help to conserve energy by allowing the user to adjust lighting taking into consideration natural daylight. The ability to turn off the lights when leaving instead of leaving them on all day certainly can conserve energy.

The SERT Patrol and/or building services should make it part of their routine in the morning to turn off lights that will not be needed during daytime anymore - it helps to make a list of those lights.

Emergency lighting: Many Building Service



Managers (BSMs) are using only the emergency lighting with natural daylight to illuminate hallways. Regular lighting is used after dark and when it is very cloudy outside. Emergency lights may also provide adequate light levels for corridors after school hours—use the light meter to check.

Conservation in Classrooms

The students in the Global Responsibility Club (SGR), at Montgomery Blair High School, affixed light switch covers to motivate students and staff to turn off their lights to conserve energy. The SGR club also applied computer monitor labels to remind students and staff to turn off computers and monitors.

There are many strategies that will work in almost any classroom. Consider the following:

- Assign a student to turn off the lights when leaving the room. You may want to give them the title of classroom energy manager and the responsibility to look for other opportunities to save.
- Assign an outdoor light monitor. The patrols or students who raise the flag in the morning could check to make sure parking lot lights are off. If not, notify your building service manager.
- Arrange your room to take advantage of natural light.
- Use the switches to control light banks in the room.
- Be aware of activities that provide an opportunity to lower light levels such as story time or when using an overhead projector, or promethean board.
- Use the blinds to allow natural light into the room. Adjust the blinds so that light reflects off the ceiling to prevent glare while spreading light over as much area as possible.
- The blinds work as insulators, too. Close them at night in the winter to help keep the heat in. Open them during the day to gain the

additional light.

- Keep the lights off in coat rooms and storage areas until needed.
- Keep blower vents clear and unobstructed. When the blower unit is blocked, it has to work harder to heat or cool. It is like driving your car with the brakes on.
- Have a task light on your teacher’s desk and turn out overhead lights when students are out of the room.
- Eliminate the use of electric space heaters, which are against MCPS policy. We also strongly discourage the use of auxiliary electrical appliances such as mini refrigerators. For alternative ideas, contact your SERT Facilitator.
- Promote sorting of trash so students can recycle in the classroom.
- Post conservation strategies in a visible place in the classroom.
- Take an inventory of recycling bins to determine your needs in the beginning of each school year so your school has an adequate supply of bins and roll-outs (order through Maximo).

Promethean boards

- Promethean boards (PB) should be powered off if they are not being used for a long period of time. It is not recommended to turn PB’s off between classes because the projector needs to cool completely before being turned on again.
- Promethean Boards should never be unplugged.
- Promethean Boards use less energy than a conventional overhead projector.

Computer Use

“Shut down the computer at the end of each use, unless a new user is waiting, and turn off the monitor. Only LAN Fileservers should be on 24 hours a day.”

Turning your computer on and off by following the

proper shut down procedures will not hurt your hard drive or programs. Keeping your computer on 24 hours a day is like keeping your television on for 24 hours. It just does not make good sense.

There are a few occasions when turning the computers on and off would be a considerable inconvenience. In that case, just turning off the monitor will save half the computer's energy use.

The exceptions are "Energy Star" systems. These will go into a sleep mode after a set period of inactivity. If your monitor has this feature, be sure it is activated. The SERT program recommends that computers be shut down at the end of the school day. When performing a manual shut down, be sure to follow the correct power-down procedures. Also, don't forget to ask the last users to turn off the printer(s), scanner(s) and any other computer equipment, at the end of the academic day.

The students at Springbrook High School say "Turn Off Your Computer" - Save energy as well as wear and tear on your hardware by shutting down your computer at night. You'll save an average of \$90 in electricity a year. The Department of Energy recommends shutting off your monitor if you are not going to use it for more than 20 minutes, and the whole system if you are not going to use it for more than two hours.

File servers need to stay on 24 hours a day.

To save energy with file servers, turn off the monitors if you can. You only need the monitor when you are working with the programs. Place a sign on the monitor stating, "The file server is to remain on at all times, the monitor is off for energy conservation."

Printers should be turned on only during working hours. Assign someone to shut down printers, scanners and other office equipment at the end of each school day. Printers in classrooms should be shut down overnight. The exceptions are those printers which are connected to computers

that receive printout alarms such as the energy management computers.

Toner Recycling

Remember to recycle all laser and inkjet toner cartridges. Post instructions near all printers for repacking and returning cartridges for recycling. Printer cartridges can be repacked in original boxes and returned to Department of Material Management. For more information, please visit: <http://www.montgomeryschoolsmd.org/departments/materials/recycle/index.shtm>

For Your Viewing Comfort

To increase comfort for computer users, reduce the lighting at computer stations. Glare, eye strain, and fatigue are all related to lighting that is shining on the monitor. Adjustments can be as simple as experimenting with the switches and utilizing the window blinds. Adjust the blinds so light is bounced off the ceiling, giving a more diffused and subtle lighting. In classrooms, resource rooms and the media centers, try removing some lamp tubes in fixtures over the computer. Typically, 15 foot candles are enough.

In computer labs, use floor lamps with a compact fluorescent lamp and switch off all the overhead lights. Lighting the wall and ceiling areas is more comfortable for computer users and eliminates reflective glare on the screens.

Office Equipment

The fastest growing energy users in many buildings are the machines we use in them. In some cases, the energy used per worker by computers, printers, copiers, scanners, and other equipment may exceed the energy used by lighting! Like lights, these machines need to be turned off at the end of regular hours. If staff needs to stay late, turn off the large copiers and select a smaller one for the less intense use. Adjust equipment to control

temperature, speed or setting that uses less energy but still does the job properly. Ask for these features when purchasing replacement or new equipment and look for the Energy Star label. A list of Energy Star products can be found at www.energystar.gov.

Will this really make a difference? By reducing the "on" time from 24 hours per day, 7 days a week to 9 hours a day, 5 days a week, you have reduced the consumption by 60 percent! Now consider the amount of computers in classrooms, computer labs, resource rooms, and offices. The results may surprise you!

Recycling in Work Rooms

Make sure all work rooms have recycling bins for paper. Posting adequate signage identifying the paper bin is helpful in preventing contamination of the paper that others have recycled. There is always a need for a paper recycling bin near printers and work areas.

Hot Water

Poor efficiency with hot water will waste both energy and water. It always pays to fix leaks promptly. Turn off hot water taps when not needed. You can also consider timers to control operation of the water heater-reducing energy use on weekends or over school breaks. Hot water may be used in your school solely for showers, washing hands in lavatories; it may also be used for laundry or dishwashing. The temperature setting for hand washing and showers doesn't need to be more than 120° F, check your water heaters which are often set at a much higher temperature.

Kitchen

There is a lot going on in the kitchen. With a sharp energy eye, you will find many opportunities to reduce waste. The SERT program recommends

working closely with the food services staff to ensure that health and safety regulations are not compromised.

Energy savings can be achieved by keeping the "on" times as close as possible to the actual use. Here are some examples:

Pre-heat ovens no longer than 15 minutes.

Electric ovens consume a lot of energy so they should be controlled as close as possible to actual cooking time. All ovens should reach working temperature within 15 minutes. If the ovens require significantly longer pre-heats, contact the maintenance depot for repairs.

Use the hood fan only when ovens are on.

The kitchen hood fans are used to remove the fumes from cooking. This is an important safety factor. Operating the hood fan while the ovens are not in use is expensive because the hood fan draws large volumes of conditioned air (room air that has been air conditioned or heated) and exhausts it outside. Allowing these fans to operate uncontrolled will drive your utility costs through the roof!

Only use lights that are needed, when they are needed.

While the food is being prepared or when the kitchen is being cleaned, try to delay turning on the lights over the serving line until the lunch period begins.

Delay turning on appliances such as warmers, mixers, etc., until they are actually needed.

Keep refrigerator coils clean and free of obstructions.

Use thermometers in refrigerators and freezers to control actual temperatures.

Start the year off with an adequate number of recycling containers in the kitchen and in the cafeteria.

Consolidate food (perishables) in one walk-in

unit and turn off free standing units.

When closing down kitchen for long breaks and end of school year, all items should be removed from the free standing refrigerators and placed in walk-in units when possible. Free standing units should be cleaned out, turned off, and unplugged. In the event of power failure, food left in smaller units may spoil and go unnoticed after power is regained. Remember, food that is thawed and then refrozen/refrigerated is a safety and health hazard.

Kitchen recycling

All kitchens should have clearly labeled and designated containers for recycling. Dedicated bottles/cans containers should be placed with signage in all kitchen areas. Number 10 cans and plastic containers should be treated as recyclable products and should be rinsed out prior to recycling. Larger recycling containers to hold these larger cans can be ordered and used to increase recycling rates. All paper products that are not plastic coated and free from food contamination should be recycled in a paper recycling bin. Work stations with recycling bins should be set up in all kitchens for convenient use. Kitchen staff should coordinate with building service staff if additional recycling pick-ups in kitchens are needed.

Increasing awareness is the first step to improve our rates. Recycling posters can be ordered through the Maximo work order system. Remember to place recycling posters so they are visible for all to see and to encourage proper recycling behaviors.

Recycling Strategies

Recycling

Montgomery County Public Schools actively participates in responsible recycling as mandated through Executive Regulation 15-04AM. In order for schools to increase their recycling rates, services

available to schools have increased through the SERT program.

SERT recycling manager and recycling technician are available to meet with recycling coordinators and teams to develop strategies, increase knowledge, and create a recycling awareness throughout the school. Exterior recycling container programs have been implemented to increase the capture of commingled material and paper outside of the school building. All high school stadiums are equipped with additional bottles/cans recycling containers next to trash containers.

Students can participate in various contests promoting resource conservation and recycling through the Watt's Up? Energy and Recycling Awareness Poster Contest, Recycling Spirit Contest, and the Lead by Example Walk It, Talk It Awareness Campaign.

SERT has identified successful recycling programs begin with an identified leader in each school who coordinates the recycling effort. Effective leadership in any program can increase productivity – even recycling. Inspiring students, staff, and community members to actively recycle and providing them with the knowledge, tools, and resources is key to a successful SERT program in each school.

Basic recycling infrastructure within a building is another necessary part of an active plan. Providing building occupants with “centralized recycling stations” will encourage and promote responsible recycling and increases recycling percentages while reducing solid waste. Using bottle/cans/commingled, paper, and trash containers increase recycling and decrease contamination.

MCPS provides recycling signage and labels to identify bins to further promote awareness and simply demonstrate proper recycling and its commitment to recycling. Field trips to the Montgomery County Recycling Center are recommended to students. Poolsville High School students chaperoned feeder schools on a field trip

to the Montgomery County Recycling Center as part of their outreach in their 2009 Lead by Example Energy and Recycling Awareness Campaign.

Involving students in the recycling program to monitor the program proves to increase recycling rates. Students can participate in classroom monitoring, centralized station monitoring, collection, public awareness, and/or simple feedback systems that can be student driven. Students at Clarksburg High School made their own commingled containers and placed them in classrooms to help capture commingled materials. During the 2011 school year, students from Northwest High School produced a rap video promoting responsible recycling. The video included students, staff, and administrative team. Elementary students can be assigned as “recycling rangers” to monitor recycling the classroom. At some schools students from the Student Government Association and Environmental clubs have joined to assist with recycling collection after school. There are 200 plus solutions to successful recycling. Increase the effectiveness of your “magic triangle” by customizing your school’s program.

Once again, developing the SERT Magic Triangle in the recycling effort helps to spread



Centralized Recycling Stations

the responsibility to all students, staff, and community members, with strong support from the administration. Leading by example is the best way to get 100 percent of the people to recycle 100 percent of the time.

Building Service Staff

The success of the SERT program depends on the “magic triangle” which is the coordination of three groups: the administration/faculty, students, and the building service staff. The building service staff plays a very important part in SERT because faculty and the students do not have the access and the technical ability to effectively deal with building issues. Building service workers can take pride and achieve recognition and awards for their extra efforts. There are many things demanding the attention of the building service workers. To get them all done in a day often seems impossible. If certain things don’t get done, maintenance problems start to multiply and get bigger. It is important to take time to ensure that maintenance items are completed. Use this list as a maintenance reminder to earn your SERT cash award.

Periodically, check to make sure there are recycling bins located next to every trash can so that staff, students, and community users are able to recycle. Recycling containers and material are available for order through the Maximo system, under the Grounds code. SERT funds can be used to purchase recycling bins directly through the Financial Management System (FMS).

It is important to provide adequate recycling bins in the cafeteria and areas that are used for breakfast and lunch time meals. Milk bottles should be emptied into dumping stations located near the bottles/cans recycling bin. Elementary schools lunch meals are served in recyclable containers. Students should be encouraged to tap their remaining food into a trash container and stack the tray on top of a flat surface so these containers can be recycled with commingled materials (bottles and cans). Building service staff should monitor the building during the summer months to make sure lighting and computers are turned off in unoccupied areas during peak hours. This helps to reduce our energy costs throughout the year. Our utility rates are based on our peak energy usage during the summer months. From 3:00 p.m. to 5:00

p.m. all energy use should be minimized through conducting sweeps throughout every building.

Building Services Checklist



For school breaks and long weekends please refer to the School Energy Shut Down Checklist (see appendix). During regular school operation, the following maintenance items will support your SERT team's conservation efforts throughout the year

- Keep lights off in large common areas (gym, multipurpose room, auditorium, etc.) when not needed in empty classrooms, and in unoccupied spaces such as storerooms, crawl spaces, etc.
- Reduce corridor lighting in over illuminated areas and turn off lights during unoccupied periods.
- Check thermostat set points: 70°F heating, 76°F cooling.
- Reduce hot water temperature to 120°F.
- Close all windows and outside doors when cooling or heating systems are in operation to control air infiltration.
- Keep corridor and classroom doors closed when HVAC is provided.
- Keep recycling dumpsters locked at all times to prevent contamination.
- Check Energy Management System (EMS) schedules for accuracy.
- Air conditioning and heating is a big electricity consumer. Consolidate necessary MCPS evening activities into the minimum number of zones possible.
- Utilize student SERT patrols to check for unused appliances left on, especially before the weekend, holidays and for the summer.
- Establish a regular inspection and cleaning schedule for lamps and fixtures. Dust build up

reduces efficiency and light outputs decrease significantly with age.

- Report dumpster repair needs to SERT recycling team
- Report repair needs of energy wasting equipment and follow up until repairs are made.
- Report any malfunctioning equipments and schedule repairs.
- Replace filters of all equipment at recommended intervals and maintain documentation per your building maintenance plan.
- Inspect ventilation equipment for obstructions and dirt. Post signs if needed.
- Replace lenses that are cracked or yellowed with new acrylic lenses or relocate if needed.
- Clean surfaces to increase reflectivity and repaint or recover with high reflectance.
- Replace ballasts and lamps with more efficient, lower wattage, energy conserving wherever possible.
- Where fixtures have had lamps removed make sure ballast has also been disconnected.
- Track energy use by logging meter readings to establish benchmarks and measure success.
- Replace exit sign light bulbs with LEDs (low emitting diode).
- Order recycling bins.
- Ask your SERT Facilitators for PEPCO energy data.

Stadium Recycling

Bins for trash and recycling should be placed outside in areas used for ICB and athletic activities. Recycling needs do continue inside and outside of the building after hours due to community use and stadium usage. Providing adequate recycling containers and instructing the staff who work at the building over the weekend on the proper procedures for capturing and disposing of recycling can help reduce contamination and help keep a clean stadium. Providing staff and groups with instructions and adequate infrastructure is a good

start. Making announcements at games, when possible, to inform guests where the recycling bins are located and to remind guests to use the recycling containers promotes the awareness and continues our culture of conservation.

When the clean-up crew starts their sweep of the stadium, please make sure they are informed and are aware of the difference between trash and recyclable material. Separating what they collect, as they collect, can increase the efficiency of the clean up process. Reminders should be posted to empty all recycling bins at outside areas appropriately to avoid overflow and contamination on weekends shifts.

One of the goals for Poolesville High School students was to make sure that the recyclables and trash are placed in proper containers. They identified that to decrease the rate of contamination they need to provide signage on all bins to provide a clear message. They also promoted that one person can make a difference. Increase employee, faculty, and student awareness of water conservation.

- Conduct contests for employees and students (e.g., posters, slogans or conservation ideas).

WATER CONSERVATION

- Seek employee suggestions on water conservation; locate suggestion boxes in prominent areas.
- Install signs in all restrooms encouraging water conservation.
- When cleaning with water is necessary, use budgeted amounts.
- Determine the quantity and purpose of water being used.

On School Grounds

Conservation procedures applicable to all MCPS facilities

- Be alert for water leaks and water main breaks. Report continuous water flow and ponding of water to maintenance immediately. Repair leaking faucets.
- Do not use school water supplies or the school grounds to wash automobiles, buses, and trucks.
- Do not allow local residents, road maintenance tankers or other non-MCPS agencies to use school water supplies, school hose bibs, or to control irrigation.
- Water should not be used for landscape and grass except by contractors during initial establishment of trees and plants.
- Mulch around plants to reduce evaporation and discourage weed growth. Apply mulch annually. Use mulching mowers. Leave mulch on grass to fertilize and reduce moisture loss.
- Remove weeds and unhealthy plants so remaining plants can benefit from the water saved.
- Increase mowing height to 2-3 inches and apply mulch to reduce evaporation and prevent weed growth.
- Use a broom rather than a hose to clean decks, sidewalks, and other paved areas: 5 minutes of running the hose uses 25 gallons of water.
- Collect rainwater for reuse in the garden whenever possible.

- Use native drought-resistant species of plants when replanting. Experts can help.

Irrigation procedures applicable to high school athletic fields only

- Water athletic fields when the ground is dry and preferably no more than two or three times a week: The amount of water used by one sprinkler in one hour is equal to the daily water needs of a family of four. You can use an empty tuna can to measure if you had 1" of rain per week, which is the amount of water grass needs during the growing season (mid April to End of September). If you can poke the wrong end of a pencil in the ground for about 2", the topsoil moisture is OK.
- Water athletic fields during the coolest part of the day (preferably morning or late evening) and never water on windy days: As much as 30 percent of water used can be lost to evaporation by watering lawn during midday.
- Make sure irrigation equipment applies water uniformly. Investigate the advantages of installing drip irrigation systems. Install soil moisture overrides or more sophisticated weather sensitive controls on irrigation systems.
- Ensure that automated irrigation systems turn off when it rains. Installation of rain switches is highly recommended to avoid this problem.
- Avoid runoff and make sure sprinklers cover just the lawn or garden, not sidewalks, driveways, or gutters.
- Avoid excess watering. Excessive watering promotes fungal growth and prevents the development of long, deep root systems needed for healthy turf.

Landscape Design

- Limit grass areas and use trees, shrubs, and other plants that require less water to landscape your yard: Grass turf requires 30-50 percent more water than shrubs and other groundcover. Landscape with MCPS-approved drought-

resistant plants.

- Use water-saving landscape and irrigation systems.
- Use captured rainwater/recycled water.
- Efficiently design playfields to reduce irrigation needs.

In the School Building

- Install low-flow toilets, waterless urinals, shower heads, faucets, and faucet aerators.
- Educate students, faculty, and administrative staff on the why and how of conserving water.

In Operations / Maintenance Policies and Practices

- Regularly check water meters, even during no-occupancy months.
- Establish water-use baseline and monitor and report consumption statistics.
- Establish method to regularly check building for water leaks and report to maintenance staff for repair.
- Repair dripping faucets, showers, and continuously running or leaking toilets.
- Install flow reducers and faucet aerators in all plumbing fixtures whenever possible.
- As appliances or fixtures wear out, replace them with Energy Star models that use less water and power.
- Shut off water supply to equipment rooms not in use for safety from flooding.
- Minimize the water used in cooling equipment, such as air compressors, in accordance with the manufacturer recommendations.
- Reduce the load on air-conditioning units by shutting air conditioning off when and where it is not needed, if you are not controlled by EMS.
- Contact EMS with air-conditioning control issues.
- Ask Maintenance to keep hot-water pipes insulated.
- Avoid excessive boiler and air conditioner blow down. Monitor total dissolved solids levels and blow down only when needed.
- Instruct clean-up crew to use less water for mopping.

Kitchen and Laundry Areas

- Turn off the continuous flow used to clean the drain trays of the coffee/milk/soda beverage island; clean the trays only as needed.
- Presoak utensils and dishes in standing water instead of using running water rinse.
- Wash vegetables in standing water; do not let water run in preparation sink.
- Only wash full loads of clothes.
- Evaluate wash formula and machine cycles for efficient water use.

Pools

- Cover pools to prevent evaporation: An average uncovered pool loses about an inch of water a week because of evaporation

Water Auditing

The MD Department of the Environment offers three forms for a water audit in facilities and at home, together with spreadsheets to fill in. This analysis is helpful to determine the status quo and, at the same time, identify potential savings.

You can download these files:

- Conducting a State Facility Water Audit
- Conducting a Drinking Water Distribution System Water Audit
- Conducting a Household Water Audit at <http://www.mde.state.md.us/programs/water/Pages/Programs/WaterPrograms/index.aspx>

Links and Resources for Water Conservation

Earth Science Week

<http://www.earthsciweek.org>

EPA Water Conservation

<http://www.epa.gov/greeningepa/water>

The Groundwater Foundation

<http://www.groundwater.org>

Maryland Department of Natural Resources-Project WET

<http://www.dnr.state.md.us/education>

National Geographic

<http://environment.nationalgeographic.com/environment/freshwater>

Project Wet Water Education for Teachers

<http://www.projectwet.org>

U.S. Geological Service Water Science for Schools

<http://water.usgs.gov/edu>

WaterShare, U.S. Department of the Interior, Bureau of Reclamation

http://www.usbr.gov/gp/water/wc_index.html

MCPS Links to SERT Program Material

School Energy Shut Down Checklist (Spring Break)

[http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList\(SP\).pdf](http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList(SP).pdf)

School Energy Shut Down Checklist (Winter Break)

[http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList\(WN\).pdf](http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList(WN).pdf)

School Energy Shut Down Checklist (Long Weekend)

[http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList\(LW\).pdf](http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList(LW).pdf)

School Energy Shut Down Checklist (Summer Break)

[http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList\(SU\).pdf](http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/ShutDownCheckList(SU).pdf)

SERT Action Plan

<http://www.montgomeryschoolsmd.org/departments/forms/pdf/201-10.pdf>

SERT Outreach Request Form

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/SERTOutreachRequestForm.pdf>

Resource Conservation Plan

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/MCPSRCP.pdf>

MCPS Recycling

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/recycle.shtm>

SERT Club Meeting Record

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/SERTClubMeetingRecord.pdf>

SERT Informational Flyers

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/flyers.shtm>

SERT Posters

<http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/posters.shtm>

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