

Warren County Public Schools
Respect and Conserve Energy (RACE)
Program



Warren County Public Schools Respect and Conserve Energy (RACE) Program Manual

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Warren County Public Schools

RACE Manual

Mission Statement

Warren County Public Schools embraces energy conservation and believes it to be our responsibility to ensure that every reasonable effort is made to conserve energy and natural resources while exercising sound financial management.

Goal

Our goal is to keep operating costs down by reducing energy waste while maintaining a safe, comfortable environment for learning. Reaching this goal will be achieved through a comprehensive energy management plan. The success of the program will only occur through a team effort where the administration, faculty, staff, students, and support personnel take on an active role in the program.

Background

Since 2003, the Energy Management Program for the Warren County Public School District (WCPS) has avoided more than \$7 million dollars in energy costs, dollars that are redirected to improving instruction for students, facilities, etc.

Warren County Public Schools is an ENERGY STAR PARTNER and has been the recipient of the Energy Star Label for 19 School Facilities and the Transportation Department. Additionally, this energy reduction has directly benefited our environment. Our impact is the equivalent of having removed 42,919 metric tons of CO₂ or 7,703 passenger cars not driven for a year or 1,097,778 tree seedlings grown for ten years.

Warren County Public Schools dedication to energy efficiency and the environment is also demonstrated in that WCPS has adopted Green building practices in all of our new construction and renovation projects. This ensures that WCPS builds schools that are environmentally friendly and provide a healthy environment for employees/students.

Focus

The Respect and Conserve Energy (RACE) program will primarily focus on the following areas:

- ✓ Communicate and encourage behavior promoting energy conservation.*
- ✓ Educate students, staff, and community to Respect and Conserve Energy (RACE) and Environmental Sustainability.*
- ✓ Encourage use of school facilities as a hands-on learning lab.*
- ✓ Engage students in active responsible citizenship through RACE activities.*
- ✓ Increase student achievement.*
- ✓ Maintain an awareness of energy efficiency best practices.*
- ✓ Provide RACE leadership opportunities to students.*
- ✓ Promote Warren County Public Schools as responsible stewards of the environment and community tax dollars.*
- ✓ Utilize internal energy audits and checklists to evaluate energy efficiency.*
- ✓ Establish Community Partnerships (i.e. Utility providers, Federal and State agencies, etc.)*

How to RACE

RACE Summary

Respect and Conserve Energy is a program that has been developed around three basic principals *monitor, raise awareness, and educate*. There are required activities and suggested activities in each area. The required activities have specific periods to be completed within and are required for each school to receive its RACE award.

Each participating school will create a RACE team that will consist of Administrator, at least one Teacher, and students. The suggested activities are optional and are included to help each team come up with ideas and to help each team to take their RACE program to the next level. The Energy Program Manual provides the framework and “how to” of the program but the level of success is up to each team and their level of involvement. Awards will be granted for their participation in RACE. The amount of the award granted will be dependent on the level of participation in the program.

A RACE Kit will be provided and will include NEED curriculum materials, awareness materials, and tools to be used as part of the School Energy RACE program.

Monitoring

Each team will start their school program by performing an initial audit of the energy habits of the people in the school. The team will check rooms to see if lights and computers have been turned off when the room is unoccupied, if the windows and doors are closed, and if the HVAC units are unobstructed (if applicable). This will allow each team to establish a good baseline of their building’s energy habits. As the team implements their awareness and education activities, they will need to continue to monitor habits by Auditing the school and issuing “Congratulations you’re in the RACE” and Your getting there “post it notes” while recording their findings and comparing these findings to their baseline. This will allow each team to measure their success in changing the energy habits within their school.

Awareness

Each team will create an energy awareness poster in September. Teams will need to hang these posters in their school during Energy Awareness Month (October). In addition, during October each school will present an Energy Awareness program to their school during an Assembly.

Education

Each team will perform a plug load study of their school that will be due by Winter Break. This will help each school learn about energy consumption. Using the data collected, the teams can educate the building occupants and community about energy efficiency and conservation. Columns in school newsletters, energy tips/facts during school announcements, plays/skits, etc. may be used to disseminate the information.

The RACE Team

The Energy RACE program in your school should be a coordinated team effort. Your team should consist of an administrator, at least one teacher, and students. The team members do not have to be energy experts; they just need to be willing to participate. The administrator plays an important role by providing continuing support to the team. Having a school administration that believes energy conservation is important will help give the Energy RACE team creditability to the staff and students.

It is up to each individual team to decide when to meet however, meeting a minimum of once a month is required.

The number of students to select for the Energy RACE team is at your discretion. The students should be interested in energy and environmental issues and be able to act responsibly. Many of the projects the students will be coordinating are student driven, so it is important to select reliable and trustworthy students that can be depended upon to plan and complete the task given.

You may choose to use an application process. Included with the application might be recommendations from former teachers and a paragraph stating why they would like to be on the Energy RACE team. A parent or guardian's signature confirming their support of their student's involvement on the energy team should also be part of the application.

Sample application and recommendation form can be found in the appendix, forms a & b. A meeting attendance form can be found in the appendix, form c.

RACE Program Schedule

August – September

- ✓ Form student energy teams
- ✓ Study forms and sources of energy
- ✓ Conduct initial building walk-through
- ✓ Create an energy awareness/environmental sustainability poster /bulletin board

October is ENERGY AWARENESS MONTH

- ✓ Present program at faculty meeting
- ✓ Hold an energy assembly
- ✓ Begin regular school energy monitoring

November – March

- ✓ Design and conduct an energy education project
- ✓ Conduct plug load study
- ✓ Continue school energy Audits
- ✓ Assist in building shut-down for school breaks

April

- ✓ Submit NEED/KY Green and Healthy Schools Youth Awards ***Project (April 15 deadline)***

May

- ✓ Attend Kentucky NEED/KY Green and Healthy Schools awards luncheon (**Date to be determined**)
- ✓ Plan for next school year

June

- ✓ NEED Youth Awards Program for Energy Achievement in Washington DC

SCHOOL AUDITS

Organizing Your Audits

1. Start by setting up procedures for your school. You will need to decide some things before you start Audits.
 - *When will you conduct Audits?*
Choose times when classrooms are usually empty such as before and after school, during lunch, and recess.
 - *Where will you conduct Audits?*
Decide if any areas will be off limits. Think about closets, bathrooms, workrooms, etc. Decide where you will store your Audits supplies. Will keys be needed to access rooms?
 - *How often will you conduct Audits?*
Schedule Audits often enough so that people will be reminded that you are always watching. A minimum of one during school and one after school Audits per month is suggested.
2. Next, create your Audit routes. You may want to start with a copy of your school's fire exit plan. Separate the school into sections that can be audited by a pair of students. Each section should have 10 – 15 rooms so that it can be audited within 5 – 10 minutes. Don't forget to include offices, portables, gym, and cafeteria.
3. Your first audit should be done in September before your Energy Awareness Assembly. You should Audit the school marking a record, *form d*, do not issue "Congratulations you're in the RACE" and Your getting there "post it notes" This will allow you to see what the present energy habits are in your school and create an energy habit baseline. (Pretest).
4. Continue to conduct audits throughout the year. Try to conduct audits on different days and be "unpredictable". Hand out "Congratulations you're in the RACE" and You're getting there "post it notes" Monitor your progress in changing habits by comparing your Audits records, *form e*, to your initial Audits.

TIP: *Keep it fun!* Try doing different things to keep interest in the program. Make announcements, such as

"Are you ready to RACE?"

Announce the results of your Audits

Post the results.

Have contests – games – have fun while learning.

How to Audit

1. Start by getting your audit materials from the designated area. Your goal is to audit all of the rooms in your area and look for opportunities to conserve energy.
2. When you enter a room, place the room number and date/time on your audit record, form e. If the room is empty and the lights are on, then energy is being wasted, place an X under lights on your audit record. If the room is empty and the lights are off, energy is being conserved, place an O under lights on your audit record. If the room is occupied and the lights are on, then no energy is being wasted, place a ✓ under lights.
3. Was the door closed when you got to the room? Put an O if the door was closed or an X if the door was open. Do the same for any windows in the room.
4. Now you want to check the computer monitors and printers. If the computers/printers are not being used and the computer monitors/printers are on, then energy is being wasted, place an X under computers on your audit record. If the computer monitors/printers are off, then energy is being conserved, place an O under computers on your audit record.
5. If your school has heating and cooling units inside the classroom, you want to check them next. Are the units clear from any obstruction? I.e. books, boxes, etc. sitting on or in front of the unit. If so, place an O under HVAC units on your audit record. If the units are obstructed, place an X under HVAC units.
6. Now it is time to leave the room leave a post it note based on your findings. "Congratulations you're in the RACE" and Your getting there "post it notes" while recording their findings and comparing these findings to their baseline.

RAISING AWARENESS

Awareness Poster/Bulletin Board

Each Energy RACE team should create Energy Awareness posters/bulletin boards. These posters/bulletin boards should be designed to increase awareness about energy conservation and posted around the school during the month of October, Energy Awareness month.

Energy Assembly

October is Energy Awareness month. During this month, each school is encouraged to host an assembly to introduce the Energy RACE (Respect and Conserve Energy) program and discuss ways to conserve energy at school, home, and in the community. Students from all grade levels should participate in the assembly.

Sample Assembly Agenda

**Discussion points in italics*

I. Introduction of Energy RACE program (Overview)

Energy RACE is a program developed to educate the school and community about energy efficiency while reducing energy consumption in schools. The Energy RACE program is based on three basic principles: monitoring, raising awareness, and education.

- ❖ *Monitoring – team monitors energy habits of the people in the school*
- ❖ *Raising Awareness – posters will be displayed in the school to raise awareness; teams will be given other items to raise awareness.*
- ❖ *Education – teams will need to develop a plan for educating the building and community about energy efficiency and conservation; Schools can earn awards based on level of participation and energy reductions.*

II. Meet the student team members and sponsor(s)

The Energy RACE team will be introduced to the school. The team should consist of an administrator, at least one teacher, and students. Sponsors if any should also be introduced at this time.

Tip:

- **A picture is worth a thousand words:** Show photos i.e., empty refrigerators. Unoccupied classroom with items left on.
- **Get the audience involved**--Play Energy Conservation and Efficiency Jeopardy as a way to teach the school energy conservation behaviors. Select student leaders, such as the student council, to be the contestants.

III. Initial Audit Results

Each team will start their school program by performing an audit of the energy habits of the people in the school. Teams will need to share results of their discoveries with the school. This gives the team and school a good baseline of their school's energy habits.

IV. Audit

The Energy RACE team will continue to audit the school to monitor energy habits. The team will issue "Congratulations you are in the RACE" and "you are getting there", recording their findings and comparing these findings to their initial audit results.

V. Ways to Conserve Energy

The Energy RACE team will discuss ways the school can conserve energy. The team could do a skit, energy jeopardy, or any other creative ways to teach the school about energy conservation.

Additional Awareness Activities

There are many ways students can raise awareness about saving energy at your school. Here are a few examples:

- ❑ **Communication:** Make daily or weekly announcements with energy tips, recognition of classes that are doing well, how much energy has been saved that month, or other upcoming energy events.
- ❑ **Writing:** Prepare articles for the school newsletter or create your own energy newsletter. Make brochures with energy saving ideas; prepare energy tip sheets about computers, small appliances, and lighting.
- ❑ **Education:** Have upper grade students teach lessons about energy to primary grades. Present energy saving ideas for the home at a PTA meeting. Introduce your team and its plans to the teachers at a monthly faculty meeting.
- ❑ **Signage:** Create an energy bulletin board; post energy efficiency information or posters throughout the school. Create signs for various machines telling how much energy they use. Post energy tip-for-the-week. Make an energy calendar for each classroom, so they can track their energy behaviors.

Tip: Get some great ideas from these successful energy programs:

- ❑ The NEED Project's "Projects and Activities" manual at <http://www.need.org/curriculum.php>
- ❑ School Eco Response Team, Montgomery County Public Schools, Rockville, MD <http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/serf.shtm>
- ❑ Texas Watt Watchers Program <http://wattwatchers.org/>

- **Classroom Energy Captain:** Ask each teacher to appoint a different student each week or month to see that classroom lights *and equipment* are off when the class leaves the room. At the end of the day, that student should check to see that blinds are down, and windows and classroom doors are closed.
- **Technology:** Prepare a PowerPoint, video or DVD with energy saving tips. Create a documentary with photos of your RACE energy activities; do a photojournalism story on the “Initial Energy Audit”—before and after; design a school web page just for energy.
- **Publicity:** Announce school energy events and/or send your energy news stories and photos to these Warren County Public Schools School District contacts:
 - *Morgan Watson* morgan.watson@warren.kyschools.us
- **Celebration Event:** Host an end-of-the event to celebrate your Energy RACE successes!
- **Documentation:** Make sure you document your activities on the activity reporting form, *form 1*.

ENERGY EDUCATION

Energy RACE Team

Students must understand what energy is in order to have a clear understanding of the importance of energy efficiency. For this reason, Warren County Public Schools School District is collaborating with The Kentucky NEED (National Energy Education Development) Project and Kentucky Green and Healthy Schools. Teams will be provided the use of NEED's *Science of Energy* kit. In addition, the District is providing one Energy RACE kit per school.

Tip: Many teachers use energy efficiency to meet the Practical Living component of the Kentucky Core Content for Assessment. The Energy Team might be called upon to teach other students about energy efficiency using the Energy Race kit.

Plug Load Study

Each Energy RACE team will perform a plug load study at their school, *form f*. This will allow the team to learn about how energy is used at their school and help them to determine where they can find ways to conserve energy.

Each room in the school will be surveyed for equipment (computers, active boards, copiers, fax machines, refrigerators, microwaves, etc.) that uses electricity using the Plug-Load Worksheet, *form f*. List each piece of equipment on the worksheet, quantity, and measure the average running wattage using the Kill a Watt meter from your Energy RACE kit. You will then need to determine if the equipment has a phantom load. Equipment that continues to use electricity after it is turned off is considered a phantom load. For example, a VCR may be turned off but the display is still on, this display is a phantom load and the VCR must be unplugged in order for there to be no energy use. Estimate how long each piece of equipment is in use during the day

After all of the information is gathered, you will need to calculate the total running hours/month, monthly kWh, yearly kWh, and Annual cost columns in the worksheet. Use the data to increase your school's energy awareness.

Building Assessment Tools

The tools and activities in the kit equip the Energy RACE team to investigate energy consumption. The Energy RACE kit includes Kill a Watt meter, light meter, hygrometer pen, digital thermometer, indoor/outdoor thermometer and flicker checker. The team will also receive grade-appropriate teacher and student guides.

Energy Shut Down for School Breaks

School breaks are an excellent opportunity for energy conservation. There are many things that can be done to conserve energy while school is closed. Included in this manual are *Energy Shut Down Checklists*. Energy RACE teams should work with Building Support staff to complete these checklists during each break. Completed forms should be kept in the Energy RACE binder to be submitted for the Energy RACE Awards program.

School and Community

The goal of the Energy RACE team is two-fold. Once the team has completed their energy assessments and are knowledgeable about conserving energy, they are encouraged to share their knowledge with the school and community. The Energy RACE teams may choose to request the following energy NEED activity guides. These guides provide ideas for activities that motivate the entire school and community to become interested in energy conservation:

- **Talking Trash**
- **Museum of Solid Waste and Energy**
- **Energy Fair**
- **Energy on Stage**
- **Energy Carnivals**
- **Great Energy Rock Performances**
- **Energy Math Challenge**
- **Energy Efficiency and Conservation Jeopardy**
- **Energy Songs**

Change a Light, Change the World...one light at a time

The Warren County Public Schools School District supports the ENERGY STAR®'s Change a Light, Change the World Campaign. This campaign is dedicated to getting people to switch out one incandescent light bulb and replace it with a compact fluorescent bulb (CFL).

If you are interested in becoming a Change a Light pledge driver and learning about funding opportunities to support your CAL campaign, contact the Kentucky NEED office via email at kreagor@need.org. Download the NEED [Teacher's Guide](#) (2.24mb pdf) for implementing the Change a Light, Change the World Campaign and set a goal to collect CAL pledges in your school and community.

TIP: One thousand Change a Light pledges will save 282,000 kWh of energy and prevent 446,000 pounds of greenhouse gas emissions. Every light changed is a step in the right direction.

Kentucky Green and Healthy Schools

The new Kentucky Green and Healthy (G&H) Schools program is an interactive web-based program for students and teachers through the Kentucky Environmental Education Council. It guides students through nine investigative inventories, one of which is energy. The G&H program is designed to improve the health and sustainability of their school buildings and grounds. Recognition is given to schools after they have completed three inventories. The energy inventory guides students through a survey of their school building to determine how energy efficient it is. Based on their inventory, students may create an education program for their school and design ways for it to save energy.

Check it out at www.greenschools.ky.gov.

RECOGNITION

Energy RACE Program

The Warren County Public Schools School District is dedicated to being a good steward of our environment and educating our students. Warren County Public School created the Energy RACE teams within the districts to encourage energy conservation, awareness, and education.

How do student energy teams receive recognition?

Each energy RACE Team will submit a portfolio to NEED (Karen Reagor) **Link to upload will be provided.** Portfolios will be reviewed by a panel of judges outside of the district.

The KY Green & Healthy Schools and KY NEED Project's Youth Awards Program

The Kentucky NEED (National Energy Education Development) Project serves as Warren County Public Schools School District's energy education partner for the Energy RACE program. One component of this program is NEED' Youth Awards Program (YAP) for Energy Achievement. The goal of this program is to recognize outstanding student leadership and student achievements in the area of energy education at the primary, elementary, middle and high school levels.

Accomplishments of the Warren County Public Schools School District's Energy RACE teams, qualify for NEED's Youth Awards program. We encourage Energy RACE student teams to submit a project documenting the accomplishments of their team. Selected teams may also be eligible to attend NEED's national conference held in Washington, D.C. in June.

What is the NEED Youth Awards for Energy Achievement Program?

The projects should be student designed and facilitated. Students, with the support of their teachers, set energy education goals and objectives and keep a record of their activities, including photographs, newspaper articles, etc. This documentation is due April 15 and should be submitted to the state coordinator. Complete details with guidelines can be found on the NEED website at: <http://www.need.org/needpdf/ProjectActivities.pdf>

How do student energy teams apply?

An application for the NEED YAP is online at <http://www.need.org/youthawards.php>. You may also schedule a visit from your state coordinator to review the process and discuss possible project ideas. For additional information, please contact the Kentucky NEED Coordinator, Karen Reagor at kreagor@need.org.

How are the NEED projects evaluated?

School Portfolio are uploaded and reviewed by a panel of judges (outside of the school district). Every school that submits a project will be recognized during the Need Youth Awards Event.

When are the NEED Youth Awards Project due?

April 15. An e-mail link is provided so you may unload your project materials.

Who is invited to attend the state awards luncheon in Frankfort?

NEED and KGHS will select student teams to attend along with the team advisor and principal.

How many teams are recognized?

Selected student teams are invited to attend the state luncheon and display their projects. State level winners at the Primary, Elementary, Intermediate and Secondary levels, as well as district wide projects, will be announced. NEED and KGHS determine winners and announce that day.

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Warren County Public Schools Energy RACE Team APPLICATION

SCHOOL: _____

Student's Name: _____

Grade: _____ **Homeroom Teacher:** _____

Address: _____

Phone Number: _____

E-mail: _____

Being selected to be a member of the Energy RACE Team is an honor and should be taken seriously. You will be expected to attend regular team meetings and to participate in activities planned by the Energy RACE team. Transportation to/from team meetings and activities will NOT be provided, unless otherwise noted. For this reason, you must arrange to be picked up after meetings and for team activities. You will need the signature of a parent or guardian stating that they support your participation on the Energy RACE team.

With this application, attach a ½ - one page statement, telling WHY you would like to be a member of the Energy RACE Team.

Recommendations from two teachers are required. Please use the form provided.

I _____ am submitting this application to be a member of our school's Energy RACE Team. If selected to be a member of the team, I understand that I will be expected to attend all team meetings and activities. I have the support of my family, and know that transportation to/from meetings is NOT provided.

Parents: As part of this program, video tapes, photographs, and web page photos are often produced by the Energy RACE team, school personnel, and outside media. By signing below you are giving permission to include your child's photo or class work in video tapes, photographs, newspaper articles, and web pages.

(Student's Signature)

(Date)

(Parent/Guardian's Signature)

(Date)

Applications are due _____

**Warren County Public Schools Energy RACE Team
STUDENT RECOMMENDATION**

SCHOOL: _____

Student's Name: _____

Grade: _____ **Homeroom Teacher:** _____

Teacher Submitting Recommendation: _____

Teacher's Signature: _____

The above named student is applying to be a member of our school's Energy RACE Team. Team members will be responsible for planning and facilitating an energy plan for our school. The team will meet on a monthly basis. Recommendations from two teachers are required. Based on your classroom experience with this student, please comment on the student's work ethic and leadership abilities.

Please return this form along with your recommendation in a sealed envelope to

_____ by _____ .

Thank you!