E=USE²

2016-2017

Program Manual

Education

= leads to

Understanding

Sustainability,

E²nergy and our **E**nvironment

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KENTUCKY SCHOOL BOARDS ASSOCIATION — KSBA — "Enlightened Leadership"

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STUDENT SUSTAINABILITY COUNCIL

CRIMSON goes GREEN

KENTUCKY AMERICAN WATER

UK UNIVERSITY OF KENTUCKY

TRANSYLVANIA UNIVERSITY
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E=USE^2

2016-2017 Program Manual

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$E=USE^2$

Education Leads to **U**nderstanding **S**ustainability, **E**nergy and the **E**nvironment

Following Our Students' Lead

Vision

Fayette County Public Schools will be a global leader in the three pillars of sustainability: environmental literacy, energy efficiency and student wellness.

Mission

To empower students to create change through enduring improved sustainability by equipping school and community stakeholders with the tools and knowledge to preserve our natural and fiscal resources

Our Approach

- Embrace student-driven model
- Create mindful engagement of diverse stakeholders and ideas
- Utilize data-driven monitoring to inform decisions
- Provide purposeful, continuous, comprehensive support to students and teachers

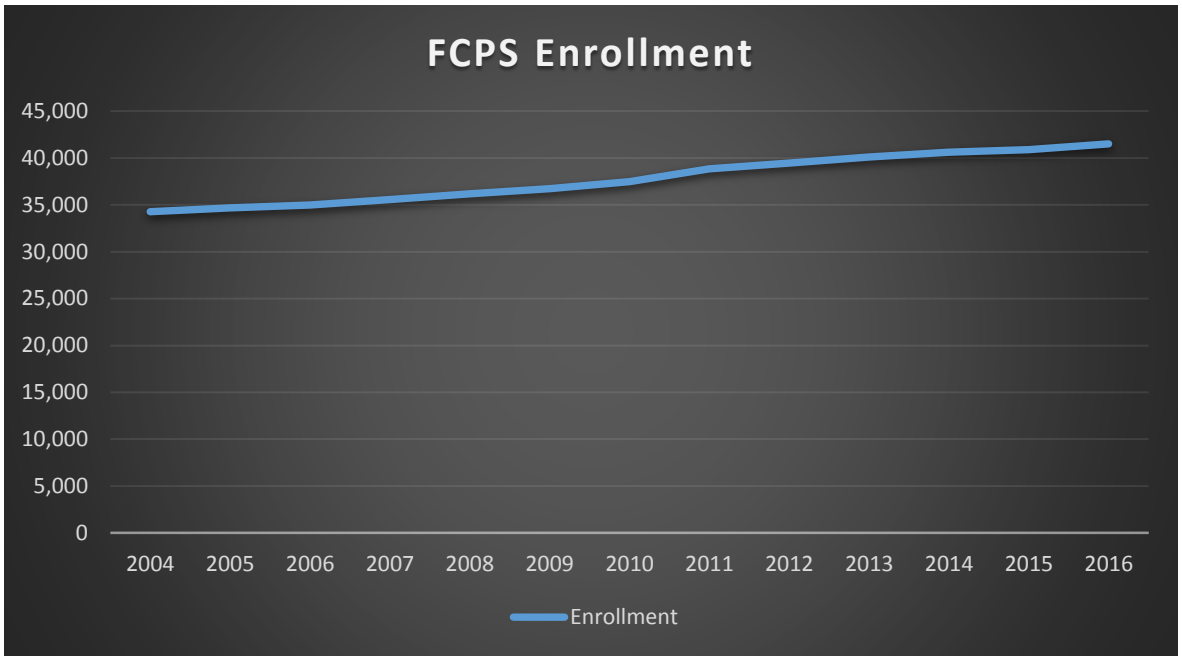
Core Values

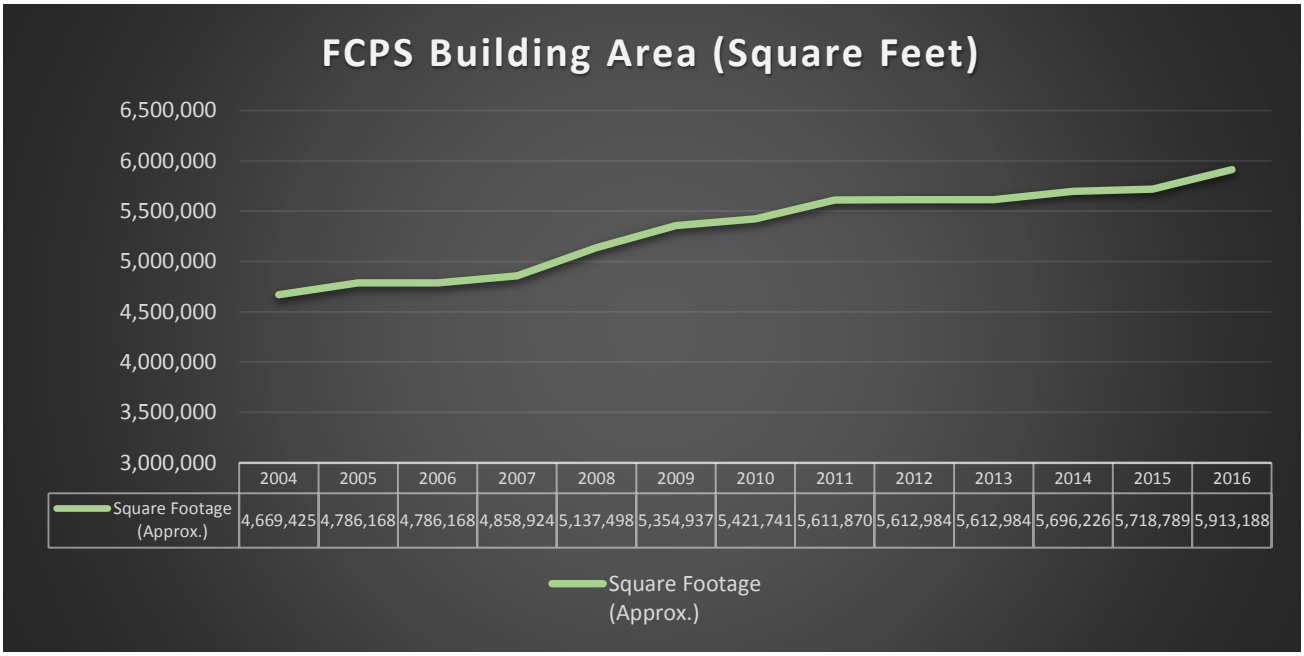
Integrity Passion Collaboration Innovation

Background

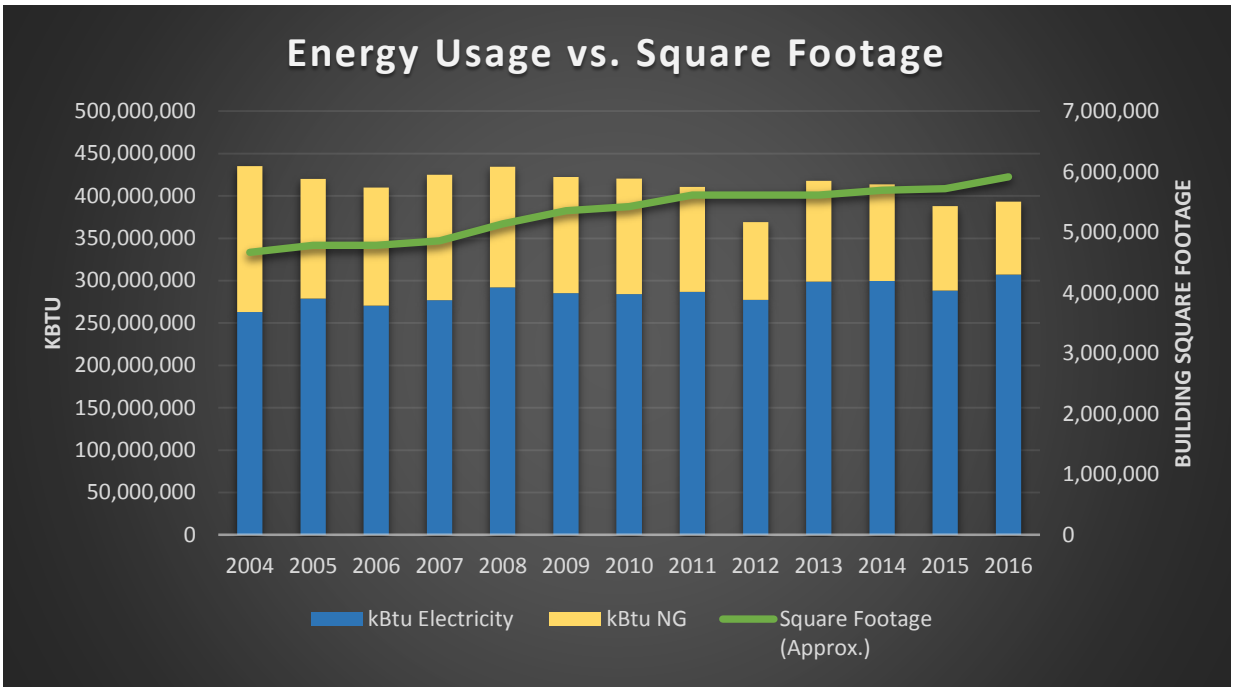
Fayette County Public Schools invests over $9 million annually in energy costs. In July 2010, FCPS made a commitment to reduce energy consumption and be more conscious stewards of our natural and fiscal resources. By July 2016, total energy consumption had been reduced 20%. With the dual approach of improving sustainability through building operations and student-led teams, FCPS continues to reduce energy consumption and costs despite increased student enrollment, increased utility rates and total square footage with additional schools and a couple unprecedented cold winters in 2014 & 2015 (see below). To date, FCPS has diverted over $6 million from utilities back to our classrooms. This is a savings of $1 million annually, over 27.661 tons of CO_2 from polluting our environment, removing 5,823 cars from the roads or planting 22,673 acres of trees through simple no cost/low cost strategies spearheaded by our students.

Over the last decade, FCPS has experienced tremendous grown in both student population and building square footage (below).

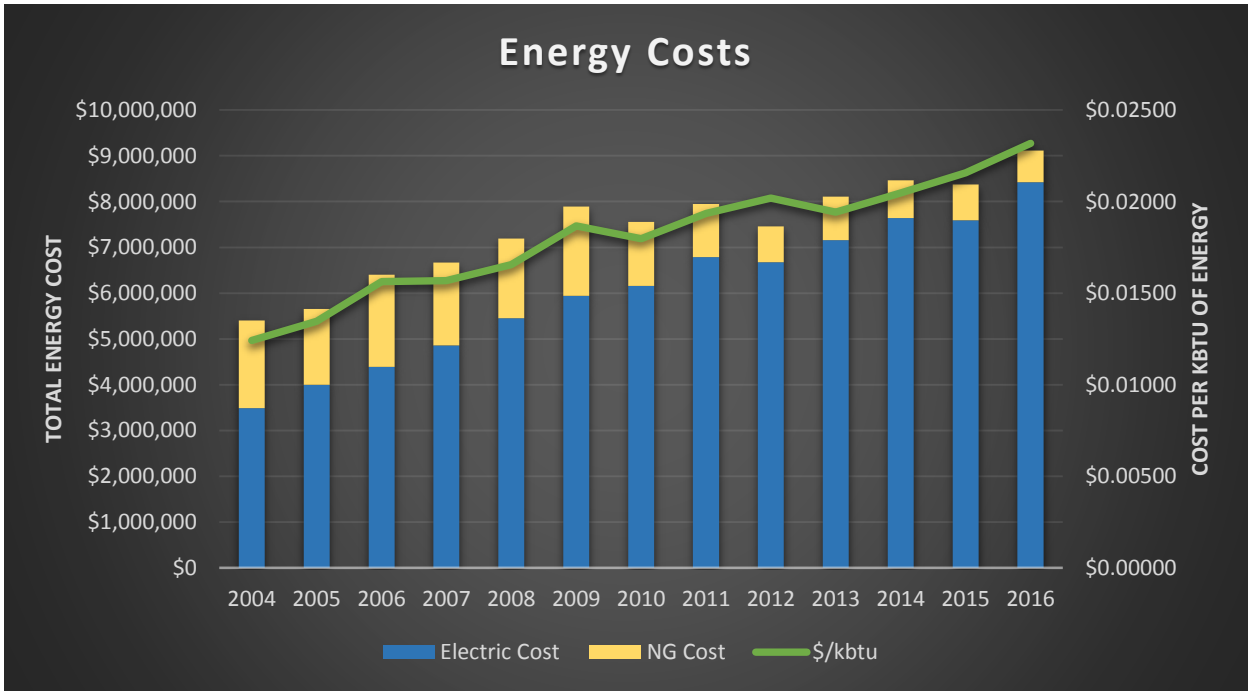




Despite this rapid growth, we have seen a reduction or plateau of energy consumption through purposeful energy management and broad stakeholder engagement (below).



Despite unprecedented increases in costs of electricity over the last few years (over 80% increase in the last decade), the sum expense to electricity and gas utilities had remained relatively stable since FCPS began aggressively tackling energy management in 2010 until recent major increases in utility rates increased costs significantly.



Electricity costs are predicted to increase **over 75% over the next 15 years** for residents and businesses. As stewards of taxpayer funds, it is critical that FCPS continue to equip our students, teachers, maintenance and operations personnel with the tools necessary to responsibly keep utility costs at bay so that fiscal resources may be invested in our most important resource: our students.

In 2013, our teachers and students were provided access to live energy consumption software to empower each of our stakeholders to make measurable, customized changes on their school campuses through student-driven initiatives and project implementation. In August 2016, FCPS teachers, students and parents will be equipped with a STEAM-infused Green Building Dashboard that will provide an engaging, multimedia, interactive online portal to each of our schools' energy consumption data. On the Green Building Dashboard, teachers may choose to incorporate this real-world data into their curriculum (Science, Math, Practical Living, ELA, etc) by learning about sustainability in the classroom, sustainable high-performing components of our new school buildings and capitalizing on social media to collaborate with our Energy Engineer. Engaging students every step of the way in sustainability is a non-negotiable in FCPS as we equip our fiscal and environmental beneficiaries with the tools and knowledge they need to collaboratively pursue college and career in a sustainable, global society.

To view FCPS's Sustainability Council Action Committees, policies, semi-annual reports and listing of Sustainability Council members, please visit www.Sustainability.FCPS.net.

Because of our dedication to energy efficiency, sustainability and environment, FCPS has adopted Green building practices in all of our new construction and renovation projects. This ensures that we build schools that are environmentally friendly and provide a healthy environment for its occupants.

As a result of our commitment to comprehensive sustainable practices in FCPS, a **Sustainability Council + Coordinated Student Health Committee** made up of a cross-section of diverse FCPS stakeholders meets bimonthly to develop a relationships-based, focused and forward-moving plan to provide direction and goals for continuous improvement of our sustainability and student wellness program. We invite any FCPS stakeholder to serve on the Sustainability Council + Coordinated Student Health Committee. To learn more, contact Tresine Logsdon at 859-619-6472 or Tresine.Logsdon@fayette.kyschools.us.

E=USE^2 is designed to educate building occupants and the community about sustainable habits and energy efficiency while using our school facilities as Living Learning Labs. Each E=USE^2 team will be composed of a Sustainability Coordinator and students identified by the principal. Each team will receive E=USE^2 recognition at our year-end Sustainability Recognition Ceremony in collaboration with KY Green & Healthy Schools, Bluegrass Greensource and KY National Energy Education Development.

The E=USE^2 program works in conjunction with the Live Green Lexington, KY NEED Project by using NEED energy kits, curriculum and the KY NEED Youth Awards for Energy Achievement program and KGHS (KY Green & Healthy Schools). E=USE^2 is a Fayette County Board of Education approved program that provides students, administrators, faculty, staff and community partners with guidance to help make informed decisions about

sustainable practices and environmental efficiency for the well-being and benefit of the Lexington-Fayette County area and social, environmental and economic health of our community.

Glossary

Baseline: an initial set of data used for comparison.

Benchmark: a follow-up set of data from which measurements may be made, usually comparing them to the baseline data.

Carbon footprint (CO_2): the amount of carbon dioxide emissions produced by the energy consumed by an individual, organization or product.

CFL: abbreviation for compact fluorescent light bulb, a much more efficient light bulb than the traditional incadescent

Cost Avoidance: amount of financial resources not spent because of advanced planning or preparation.

Emission: releases of gases to the atmosphere from some type of human activity (cooking, driving a car, etc). In the context of global climate change, they consist of greenhouse gases (e.g. release of carbon dioxide during fuel combustion).

Energy efficiency: activities that are aimed at reducing the energy used by substituting technically more advanced equipment, typically without affecting the serviced provided.

HVAC: the abbreviation for heating, ventilation and air conditioning systems

Kilowatt hour (kWh): measure of electricity defined as a unit of work or energy, measured as 1 kilwatt (1,000 watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu or 3.6 million joules.

LED: abbreviation for light emitting diode, the most efficient light buld

TIP: Studies have shown that by turning out the lights in a classroom when they are not needed can save $50 per classroom/month. How many classrooms are there in your

Phantom Load: amount of electricity drawn from electric appliances whey they appear to be off, but are actually in stand-by mode (often signified by a small colored light). Usually, cords with small black boxes attached, such as a cell phone charger, coffee maker or microwave, continue to draw electricity, even when the phone is not connected to that cord.

Plug Load: amount of electricity drawn from electric outlets by appliances and equipment.

2016-2017 Program Schedule

	(Suggested Ending Dates)
Step 1: Form a E=USE^2 Team	**September 28th**
Step 2: Student-driven Building Assessment	**October 23rd**
Step 3: Awareness & Education	**December 16th**
Step 4: STEM & Our Environment	**February 17th**
Step 5:KY NEED Youth Awards for Energy Achievement	**April 15th**
Step 6: Recognition & Celebration	**Earth Day 2017**

II. Getting Started

E=USE^2 2016-2017 Program Overview

The E=USE^2 program is a tool to assist school leaders in making decisions to improve student-driven sustainability--to include energy efficiency, environmental literacy and student wellness—through projects and initiatives in their building and on campus. By choosing smart, sustainable options, schools improve students' environmental literacy, save natural and financial resources and provide healthier, more effective learning environments by applying 21st Learning and STEAM skills. E=USE^2 content and lesson are closely monitored to maintain KY Core Academic Standards alignment with special emphasis on NGSS, Common Core and Practical Living. Each step of E=USE^2 is purposefully infused with STEAM activities and learning objectives.

Once formed, each E=USE^2 Team will receive the tools necessary to complete the program: a Kill-A-Watt meter, foot-candle light meter, patrol Thank You and Ticket post-its, Energy Team lanyards/badges, awareness posters/materials and the steady support and guidance for the energy sustainable projects that a school chooses to implement. Tresine Logsdon, FCPS Energy & Sustainability Curriculum Coordinator, will offer support by facilitating and mentoring school E=USE^2 Teams, serving as portals to local, district, state and national resources and partnerships and curriculum, providing guidance through KY NEED and KGHS programs and serving as a one-stop source for assistance on sustainable solutions for schools.

STEP ONE

Form a E=USE^2 Team

(By September 28th)

- Your school's E=USE^2 will be the size and composition that accommodates your school's instructional goals most seamlessly.
  - Many **elementary schools** choose to engage the entire 3rd, 4th or 5th grade level. Some choose to implement through one teacher's class, G&T enrichment team, club or RTI class.
  - Many **middle schools** identify a core content or elective classroom teacher who is passionate about sustainability and implement E=USE^2 through their class(es). Others choose a before/after school club.
  - Most **high schools** implement E=USE^2 through an AP Environmental Science/Earth Science/Biology class or an Environmental Club.
- Students who serve on their school's E=USE^2 Team will:
  - Perform leadership roles
  - Be trained on basic data collection equipment
  - Analyze, interpret and graph collected data
  - Raise awareness about sustainability to their school community
  - Collaborate with local and state student sustainability organizations and partners
  - Participate in classroom discussions about local, state, national and global sustainability issues

TIP: Consider nominating a Student Leader for each of the steps to provide leadership opportunities and delegate primary responsibilities.

- ***If your school is not a current KY Green & Healthy Schools participant:*** go to www.greenschools.ky.gov to learn more and e-mail Wesley.Bullock@ky.gov or call 502-564-5937 to get started.
  KGHS Pledge Form found on Form B in appendix.
  Any questions about KGHS? Contact Tresine.Logsdon@Fayette.Kyschools.us or 859-619-6472.
  - *For Your Convenience:* Use Student Application (**Form G**) or Teacher Recommendation (**Form F**) if you would like to nominate members for your E=USE^2 Team.

Contact Tresine Logsdon at Tresine.Logsdon@fayette.kyschools.us with questions or concerns about Step 1.

STEP TWO

Student-Driven Energy & Sustainability Assessment

(By October 23rd)

- **Students:** INVESTIGATE your building through a **Secret Audit Form E** (provided during lesson).
  - Circle Secret at the top of the form.
  - Plug data into provided spreadsheet to analyze results in bar, line and pie graphs.
- **Students**: INVESTIGATGE plug loads in your building using a Kill-A-Watt meter (elementary- Belkin Conserve Insight meter) for 1 classroom (1 non-classroom and 1 office if you choose).
  - See Tresine Logsdon for Kill-A-Watt meter checkout.
  - Plug data into provided spreadsheet to analyze results in bar, line and pie graphs.

Don't Forget to Distribute the Fall Break Shut Down Checklist that will be e-mailed to you 1-2 days before Fall Break!

- **Students:** INVESTIGATE light levels in your building use a foot-candle light meter to determine areas of your building that may be over or under lit using **(Form E)**.
  - See Tresine Logsdon for foot candle meter checkout.
  - Plug data into provided spreadsheet to analyze results in bar, line and pie graphs.

Students: Submit **KY Green & Healthy Schools Project Form** (if Energy inventory is already complete, choose a different category). Find the KGHS Project Form by clicking ***Program Overview*** @ www.greenschools.ky.gov.

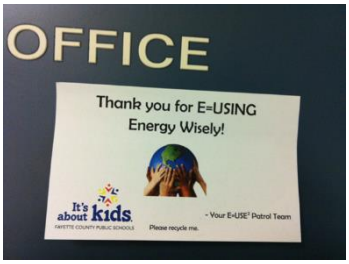
- Need help completing or submitting the KGHS Project Form? Contact Wesley.Bullock@ky.gov or call 502-564-5937.

➢ Secret Audit

The first step for your E=USE^2 Team is to perform an **energy audit** of your school's energy and sustainability habits (**Form E**). Your team will check rooms to see if lights and computers have been turned off when the room is unoccupied, if the doors are closed and if the recycling bins are being utilized. This will allow your team to establish a good baseline of your school's energy and sustainability habits.

Be sure to use your Thank You and Oops Ticket Post-Its©, Power Patrol badges and lanyards. **Date each of your Monthly Patrols** and decide as a Team:

- ✓ How many "x"s qualify for an Oops Ticket
- ✓ Where you will place Post Its© in each classroom



Don't forget to monitor your school's energy consumption through our **new** **Green Building Dashboard**!

➢ Light Level Survey

Check out a foot candle meter from Tresine Logsdon and conduct a survey of your school's lighting. Use Form F for your light level survey and compare your data to the minimum amount of light required by state law. If there are areas (particularly corridors and foyers) that are way over lit, let your E=USE^2 Team know. Overlighting an area can create a stressful working environment, especially in areas where daylighting is an option. Use **Form D**.

To use the foot candle meter, carefully remove the cap of the sensor and turn the unit on. Important tips to remember when using your foot candle meter:

- ✓ Your sensor should be at waist level in a corridor/foyer and at desk level in a classroom or office.
- ✓ Hold the sensor parallel to the floor and as still as you can.

➢ Plug Load Study

Each team will perform a **Plug Load Survey** (**Form C**) on 1 classroom (+ 1 non-classroom and 1 office space if you desire) to learn how plug loads affect the energy usage in their school and determine where energy can be conserved. To perform a plug survey, list each piece of equipment on the worksheet, the quantity (# of each) and measure the average running wattage using the Kill-A-Watt meter.

Using a Kill-A-Watt Meter

1. Plug the appliance or electrical strip into the Kill-A-Watt meter.
2. Plug the Kill-A-Watt meter into the wall.
3. **Press the middle gray WATT button.** This is a toggle button, so be sure to look at the units carefully to make sure you are measuring wattage, not voltage.
4. Let the number stabilize, then write that number in Column D of your Plug Load Worksheet.
5. If you are measuring a microwave plug load, consider measuring the wattage when it is not in use (23.75 hrs/day) and the wattage when it is in use (.25 hours or 15 minutes/day). This will give you a more accurate idea of how much energy is being consumed by the microwave.
6. Don't forget **phantom loads**! If it is plugged into the wall, it is probably drawing energy! This includes televisions, projectors, SMART boards, DVD players, coffee makers, etc.

You will 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 DVD player may be turned off but the display is still on. This display is a phantom load and the DVD must be unplugged in order for there to be no energy use. After all the data is collected, simply calculate the total running hours/month the appliance is in use, monthly kWh, yearly kWh and Annual Cost columns on the worksheet (**Form C**).

Using a Belkin Conserve Insight

Follow directions on your Plug Load Survey data collection sheet.

*Don't Forget To record your weekly/monthly energy consumption through our **new** Green Building Dashboard!*

➢ KY Green & Healthy Schools Improvement Project

Students will choose any of the 8 categories of KY Green & Healthy Schools to investigate and implement an Improvement Project.

Teachers can use the Teacher Guides for each of the 8 categories found on www.greenschools.ky.gov for support and curriculum resources.

Eight KY Green & Healthy Schools Categories:

- Energy
- Green Spaces
- Water
- Air Quality
- Health & Safety
- Solid Waste
- Hazardous Chemicals
- Transportation

Contact Tresine Logsdon at Tresine.Logsdon@fayette.kyschools.us with questions or concerns about Step 2.

STEP THREE

Energy Tracking & Awareness

(By December 16th)

- **Students:** CONTINUE conducting monthly energy audits
- **Students**: MONITOR your school's energy consumption data weekly with **FCPS Green Building Dashboard WebQuest**
- **Students:** DISTRIBUTE light switch face plate stickers in all classrooms and office areas **OR** exterior door stickers on the inside of each exterior door.
- **Students:** DESIGN an awareness poster to be submitted to district-wide Earth Day celebration

- Earn a water bottle refilling station by participating in the KY American Water Excellence in Water Education program.
- Adopt-A-Tree by partnering with UK's Urban Forest Initiative.

➢ FCPS Green Building Dashboard Webquest

- **We are excited to launch FCPS's new Green Building Dashboard** for 16-17!
- During this visit & lesson, your students will be trained on accessing, exploring and navigating the Dashboard and monitor YOUR live energy consumption data!
- To access the Webquest, click on *Teacher & Parent Corner* on www.sustainability.fcps.net.

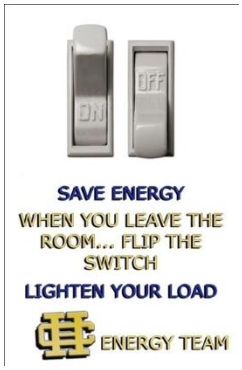
➢ Awareness Stickers

Get your FREE E=USE^2 **awareness stickers** from Tresine Logsdon. Apply these stickers throughout your building. If students or staff ask you what you're doing, invite them to be a part of your efforts. Spread the word by stickers and by mouth and watch your school's energy consumption decrease right before your eyes. Don't forget to let all teachers, students and parents in your school know why they are there through an announcement or e-mail!

- ✓ Light switch face plate stickers
- ✓ Exterior door stickers
- ✓ Appliance stickers

➢ Awareness Poster

- ✓ Design and create an **energy awareness poster**. We recommend that your poster be digitally created, but you are also welcome to hand draw your poster if you like. If you hand draw your poster, it will need to fit within 11x17 dimensions.
- ✓ Poster **must include:**
  - **School Name**
  - **Sustainability Message**
- ✓ Consider opening up the opportunity to every student in your class, grade or school and voting on the favorite.
- ✓ Your poster will be printed and copied 55 times to be shared with every other FCPS school in time for Earth Day 2017. **Your artwork will be seen by thousands of other FCPS students, teachers and community members!** Your school will get a copy of your poster and one from every other school to display as part of your Earth Day celebration.
- ✓ To see school energy awareness poster examples from previous years, seewww.Sustainability.FCPS.net.



Keep it FUN! Make announcements, such as "Are you E=USE²ing energy wisely?" or "E=USE² is watching!" Announce the results of your patrols. Post the results on a bulletin board or newsletter. Consider having a contest for the class that earns the most "thank yous" or the class that is most improved.

➢ *Extra Enrichment:* Energy Awareness Video

Using Microsoft Movie Maker© or any other video editing software, create a short public service announcement that will raise awareness about the importance of energy efficiency, student wellness and sustainability at your school and at students' homes. To see school energy awareness video examples from previous years, see www.Sustainability.FCPS.net.

Contact Tresine Logsdon at Tresine.Logsdon@fayette.kyschools.us with questions or concerns about Step 3.

STEP FOUR

STEAM & Our Environment

(By February 17th)

During Step 4, Engineer Logan will visit and we will purposefully explore sustainability through the STEAM Lens.

- **Students:** DISCUSS observations from Green Building Dashboard live energy monitoring @ YOUR school.
- **Students**: ACTIVITY *What is an Engineering Career Pathway?* and *What is a Sterlin Engine?*
- **Students**: BRAINSTORM project ideas for Go Green + Earn Green funds.
- **Teacher**: SCHEDULE a visit with your Bluegrass Greensource Environmental Educator to complete your school's Sustainability Scorecard.

➢ Green Building Dashboard

- ➢ To access the Dashboard, click on *Green Building Dashboard* link on www.sustainability.fcps.net.
- ➢ To access the Dashboard Webquest, click on *Teacher & Parent Corner* on www.sustainability.fcps.net.

➢ What is an Engineering Career Pathway? and What is a Sterlin Engine?

- ➢ Students will learn what it takes to be an Engineer from FCPS Energy Engineer Logan Poteat and play *Which Engineering Career Pathway Am I* with Logan.

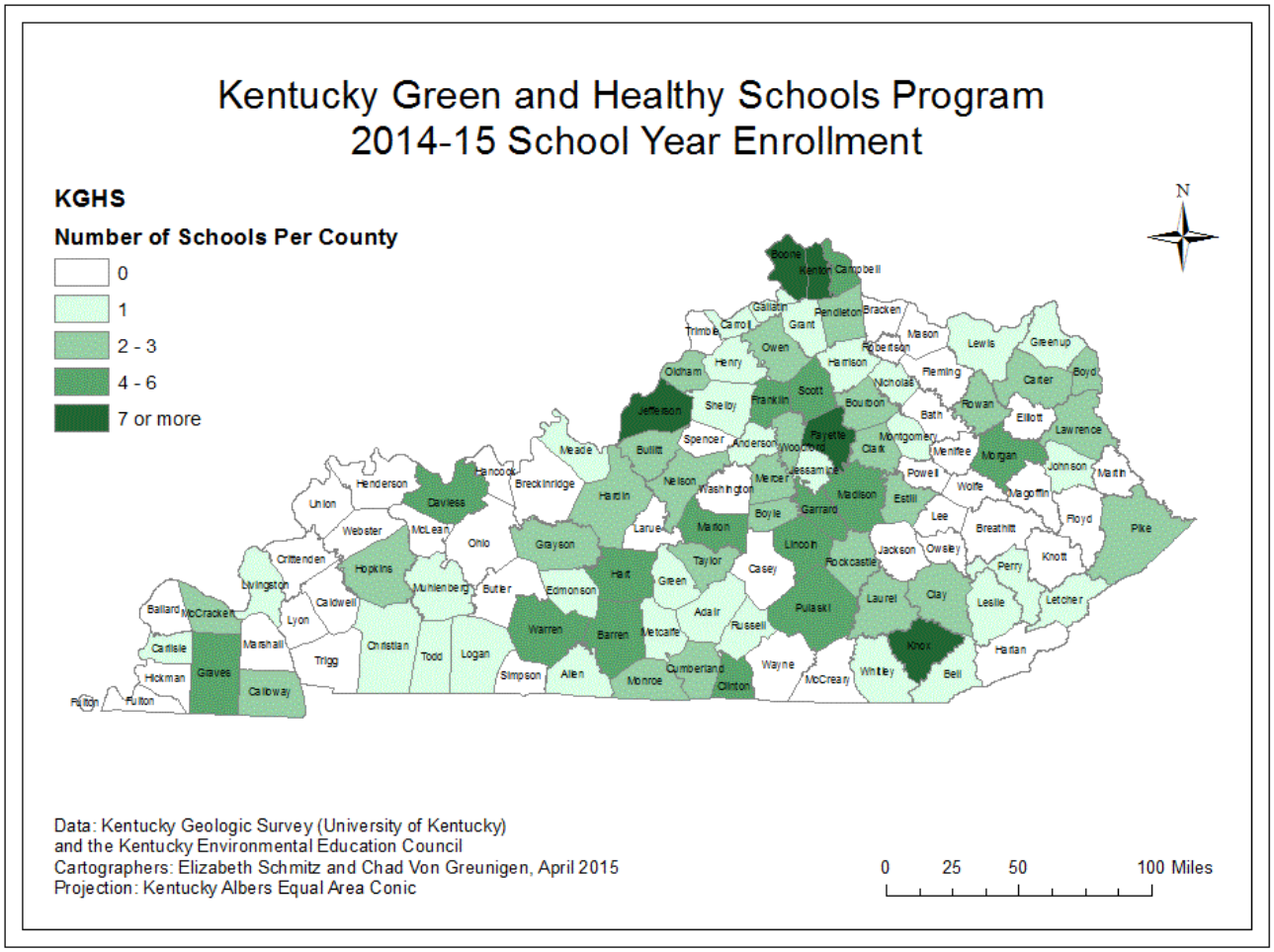
➢ Go Green + Earn Green

- ✓ We'll discuss how much your school has earned through the Go Green + Earn Green energy reduction award program and project ideas for your earned funds.
- ✓ Consider submitting your project as a KY Green & Healthy Schools project.

➢ Sustainability Scorecard

- ✓ Schedule 30-minutes for your Bluegrass Greensource Environmental Educator to stop by and help you complete your 2017 Sustainability Scorecard.

 Light Emitting Diodes (LEDs)	 Incandescent Light Bulbs	 Compact Fluorescents (CFLs)
50,000 hours	1,200 hours	8,000 hours
6 - 8 watts	60 watts	13-15 watts
329 KWh/yr.	3285 KWh/yr.	767 KWh/yr.
$32.85/year	$328.59/year	$76.65/year



- **Classroom Checklists**

  Has your school posted E=USE^2 Classroom Checklists during a previous school year? If so, check to see if there are classrooms or offices that need a new one. If not, provide each classroom teacher and staff member a Classroom Checklist to post beside the door. *For your Classroom Checklists printed on cardstock, contact Tresine.Logsdon@fayette.kyschools.us*. See **Form A**.

Contact Tresine Logsdon at Tresine.Logsdon@fayette.kyschools.us with questions or concerns about Step 4.

STEP FIVE

Sustainability Scorecard

(By April 15th)

- **Students:** BRAINSTORM and EXPLORE your school's achievements this year by completing your Sustainability Scorecard with your Bluegrass Greensource Environmental Educator
- **Students**: DISCUSS observations from Green Building Dashboard live energy monitoring @ YOUR school.

➢ Sustainability Scorecard

- ✓ Your Bluegrass Greensource Environmental Educator will review your school's Sustainability Scorecard with students.
- ✓ Schools will be recognized @ a Fall 2017 FCPS Board of Education meeting

Contact Tresine Logsdon at Tresine.Logsdon@fayette.kyschools.us with questions or concerns about Step 5.

STEP SIX

Recognition & Celebration

(Earth Day 2017)

- **E=USE^2**
- **Sustainability Scorecard**
- **KY National Energy Education Development project**
- **KY Green & Healthy Schools**

➢ **Recognition and Award**

CONGRATULATIONS! Your school will be invited to attend the spring 2017 Live Green Lexington School Recognition Ceremony.

Date/Location TBD @ printing.

Recognition Ceremony, April 2017

The **Bluegrass Youth Sustainability Council** and **Idea Festival** will team up with Fayette County Public Schools, Bluegrass Greensource, KY Green & Healthy Schools and KY National Energy Education Development project to host an **Earth Day Celebration and Recognition Ceremony** in late April. You and your students will receive an invitation to the event in March 2016. At the ceremony, your school will accept recognition as participants in the E=USE^2, WasteBuster, Water Partner, Energy Partner, KY Green & Healthy Schools and KY National Energy Education Development project and KY American Water Excellence in Water Education programs.

III. FCPS Student Sustainability Initiatives

Below is a short description of optional student sustainability initiatives outside of E=USE^2.

To find out more about any of the following projects, please contact Tresine.Logsdon@fayette.kyschools.us or 859-619-6472.

a. Bluegrass Youth Sustainability Council

High School Teachers: to nominate a student to serve on the BYSC, please contact Tresine.Logsdon@fayette.kyschools.us.

The Bluegrass Youth Sustainability Council (www.Sustainability.FCPS.net/BYSC) was formed in November of 2010 and is a project-based organization composed of a cross-section of environmentally passionate students from Fayette County's five public high schools, Sayre School, Lexington Catholic High School, Montessori High School of KY and Lexington Christian Academy. Mentored by Tresine Logsdon and in partnership with a diverse cross-section of community cohorts, the BYSC meets monthly to discuss collaborative projects, short-term and long-term goals, partnership prospects, leadership examples and post-secondary opportunities in sustainability and energy management. The BYSC serves as an excellent leadership and collaborative opportunity for our area youth who deeply care about environmental quality and are motivated to work together with local experts and volunteers on projects to improve sustainability. Simply put, the BYSC is a team of likeminded individuals ready to promote our cause throughout our community and our world.

2012

2013

The culminating event hosted by the BYSC is the Earth Day Celebration. In April 2012, the Bluegrass Youth Sustainability Council hosted President Bill Clinton as keynote speaker for their Earth Day Celebration. In April 2013, the Bluegrass Youth Sustainability Council hosted First Lady Jane Beshear as keynote speaker for their Earth Day Celebration.

2014

b. Cans for Cash (Recycle Bowl)

Each year in October, many FCPS schools partner with Bluegrass PRIDE to participate in the annual Cans for Cash competition. Students across Lexington typically collect up to 8,500 lbs of aluminum each year. Cans for Cash rewards schools for their remarkable impact on the planet through aluminum recycling: recycling 40 cans saves the energy equivalent of one gallon of gasoline. Cans for Cash rewards schools in three categories (fewer than 300 students, 399-599 students, 600 or more students) for cash rewards of $600, $800 and $1,000. Each year, schools partner with Wise Recycling, Baker Iron and Metal, Phinix LLC and the Lexington-Fayette Urban County Government's Division of Waste Management. The nationwide contest is sponsored by a partnership of the US Conference of Mayors and Keep America Beautiful Inc. To learn more about Cans for Cash, contact your Bluegrass Greensource Environmental Educator.

c. Communications

It is critical that our schools understand their important role in district-wide sustainability goals and projects. It is equally essential that schools be provided a platform from which to spread the word about the good deeds and extraordinary accomplishments happening in their schools and on their campuses. The following initiatives are designed to facilitate district-wide collaborations among our schools and between our schools and community partners:

- Weekly Good News stories on the front page of www.Sustainability.FCPS.net.
- Quarterly E=USE^2 Newsletters to E=USE^2 Teacher Leads
- Quarterly *It's About Sustainability* broadcasts on Ch. 13
- Faculty meeting presentations, upon request

FCPS's website dedicated to sustainability initiatives is www.Sustainability.FCPS.net. This website serves as the one-stop resource to learn about what is happening in our schools, partnership opportunities, school celebrations, parent-teacher ideas, publications on sustainability topics and school energy consumption data.

To highlight your school's unique achievements in sustainability on our website, newsletter or *It's About Sustainability* broadcast, please contact Tresine.Logsdon@fayette.kyschools.us.

d. Sustainability Carnival/Fair/Guest Speaker

Looking for a STEAM or environmental science guest speaker in your classroom? Considering hosting a Sustainability Fair during an Open House? Want to host an Energy Carnival during Orientation? Community Partners such as Center for Applied Research, CMTA Engineers, Siemens Technologies, UK Student Sustainability Council among many others have provided contact information to visit your school. For the Sustainability Community Partner Guest List, please contact Tresine.Logsdon@Fayette.Kyschools.us.

e. Composting

For a bound copy of the ***FCPS Composting Manual for Schools***, please contact Tresine.Logsdon@fayette.kyschools.us or download at www.Sustainability.FCPS.net.

A Composting Steering Committee made up of FCPS teachers, custodians, cafeteria managers, FCPS Child Nutrition, Bluegrass Greensource and community experts developed a *FCPS Composting Manual for Schools* that includes an application and step-by-step procedure to guide schools towards mastery understanding of the benefits of composting along with classroom curriculum materials. The manual clearly explains several different ways and scales of composting as well as local vendors and resources for acquiring necessary equipment.

There are a variety of ways for schools to begin and support a composting program. It is recommended that schools begin with a classroom vermicompost before moving towards a more comprehensive outdoor composting program.

f. Design/Renovation 101 Teams

Each school year on average of eight FCPS schools are under renovation or design for renovation. Starting with the 2011-2012 school year, pilot Renovation 101 & Design 101 Teams formed. Students on these teams meet once a month with architects and engineers of their school's renovation to understand the sustainable and high performance components of their school renovation. This unique opportunity acquaints students with architecture, engineering and STEM career pathways and provides leadership opportunities for students as they emerge as their school community's liaison to their school renovation. Students use the information they learn to design progress presentation to be delivered at faculty meetings, Open House events or any school-wide community event.

g. Farm To School

Lexington's Farm To School organization is a robust collaboration with the School Garden Coalition, FCPS Child Nutrition, Fayette County Health Department, UK Extension and local farmers to identify schools with school gardens or a high at-risk student population to participate in locally produced Taste Tests.

Student leaders are identified to facilitate the Taste Test by raising awareness on the human health, environmental and economic benefits of local foods and distributing the Taste Test produce to their classmates during lunch. Each student who participates in the Taste Test featuring

local produce like sweet potatoes, eggs, beets, lettuce, onions or apples are rewarded with an I Tried It sticker. Farm To School also partners with schools during school-wide events such as Open House, Energy Carnival or other sustainability-focused events by providing a booth for parents, teachers and students to learn more about local food.

h. KY American Water Excellence in Water Education Award

KY American Water is proud to partner with FCPS for the KAW Excellence in Water Education Award, a program that recognizes and awards schools for teaching lessons and implementing initiatives on water issues, conservation and quality. The KAW EWE program allows schools to earn a water bottle refilling station for their school by creating a video public service announcement (topic to be announced). The **top four FCPS schools** to earn the most points per the rubric will be awarded a free water bottle refilling station. Projects and lessons that can be applied towards the award are Bluegrass PRIDE water activities, a campus rain Inventory, Water Planet Challenge activities or any school initiative that addresses such issues as water conservation, water efficiency, and water quality. Winners for the 2015-2016 KAW Excellence in Water Education Award were Bryan Station HS, Henry Clay HS, Northern Elementary, Sandersville Elementary and Leestown Middle School. To apply, please contact Tresine.Logsdon@fayette.kyschools.us.

KENTUCKY AMERICAN WATER

i. Living Lab Teams

FCPS believes that our school facilities should be used as Living Labs for our teachers and students, integrating STEM career pathways and instruction into classroom curriculum. In 2011, Wellington Elementary piloted a Living Lab Team. The third New KY Green & Healthy School in Kentucky, Wellington's building design incorporates green technologies and are models of efficiency and conservation that include features such as:

- Daylighting
- Durability
- Energy Analysis Tools
- Energy-Efficient Building Shell
- Environmentally Preferable Materials and Products
- Environmentally Responsive Site Planning
- High-Performance HVAC (Heating/Ventilating/Air Conditioning)
- High-Performance Electric Lighting
- Life Cycle Cost Analysis
- Renewable Energy
- Safety and Security
- Superior Indoor Air Quality
- Thermal Comfort

- Visual Comfort
- Water Efficiency

Wellington's pilot Living Lab Team is collaborates with GBBN Architects, CMTA Engineering, and UK College of Engineering to assess the impact on student learning by measuring growth in environmental literacy and science and math core content. Wellington teachers are trained on ways to engage students by integrating the information available on the Green TouchScreens into the daily curriculum. Similarly to Renovation 101 and Design 101 Teams, Wellington's Living Lab Team meets periodically with the team of architects and engineers involved in their school design and construction to understand the unique high performing features of their school and utilize their building as a Living Lab. Armed with this knowledge, students serve as liaisons to their school community and provide tours and presentations on the sustainable, high-performance components of their school.

j. Locust Trace Agriscience Center Tours

In an effort to reinforce content learned throughout E=USE^2 and allow students to see first-hand sustainability-in-action, E=USE^2 teams are invited to tour Locust Trace Agriscience Center, FCPS's most sustainable school campus. While at Locust Trace, students directly understand how their sustainability initiatives in their school are closely related to and supported by the sustainability initiatives at Locust Trace. E=USE^2 meetings and class discussions came to life when students are actively engaged in the high performance and sustainability initiatives at LTAC including solar thermal array, solar PV, recycled rainwater catchment systems, green roof, constructed wetlands for waste, zero-solid waste campus, daylighting, rain garden, Governors Garden, aquaculture and green houses. LTAC students lead students through KY NEED Energy lessons.

k. High/Middle/Elementary Mentoring Partnerships

Looking for a high school E=USE^2/Green Team student to visit your feeder middle school team to discuss ways to get involved in the sustainability initiatives in their high school? Would your 3rd grader students like to meet middle school students from their feeder middle school to learn about how to become a leader in school sustainability projects? Get in touch with Tresine.Logsdon@Fayette.kyschools.us and find out how to connect with the E=USE^2 Team in the elementary/middle/high school that your school feeds into or from.

l. Adopt-A-Tree

The University of Kentucky has been moving steadily towards greater environmental sustainability through multiple initiatives, including greater emphasis on tree canopy throughout the greater Lexington community. UK Forestry is looking to schools to help improve our campus tree canopy through the Adopt-A-Tree program to increase awareness and visibility of city trees by creating an educational web presence that provides information about campus trees and ways in which they improve our school campus environments

Why Adopt-a-Tree?

- Simple and Free
- Learn to measure a tree
- Fun group or team-building exercise
- Estimate ecosystem benefits of your favorite tree
- Join in creating a "treekeeper" community in the Bluegrass, share your love of trees!

Why Lexington?
The majority of the urban trees in Lexington are on private property and school campuses. This includes all of the schools, homes, businesses in our community. Promoting the beauty and benefits of our urban trees is a group effort. The tree in your yard benefits us both. The trees in all of our yards make up the urban forest. A healthy urban forest is a real possibility, one that starts with awareness of its benefits by us, the community.

It's Easy To Adopt-A-Tree!

1. E-mail Tresine.Logsdon@fayette.kyschools.us to join the FCPS Adopt-A-Tree Community and schedule a classroom visit from a local arborist for a 30-minute training on how to measure a tree.
2. Visit http://ukntrees.ca.uky.edu/adopt-a-tree to download the packet and Tree Benefits Calculator.

m. No Idling

In partnership with the KY Division for Air Quality and Earth Day Network©, school are invited to implement a pilot No Idling Campaign that is strictly voluntary, student driven and includes measurable benchmarks based on student collected data . As part of a school's No Idling campaign, Tresine Logsdon provides brief training to teachers, administrators and students on the health, economic and environmental benefits of a No Idling Campaign and supplies materials and resources such as flyers, newsletters, car tags, Thank You notes, data collection spreadsheets, and pledge cards. Through spring 2014 the following schools have implemented a student-driven No Idling policy that have led to over 50% reduction in afternoon carpool idling overall: Athens Chilesburg Elementary, Glendover Elementary, Julius Marks Elementary, Rosa Parks Elementary, Wellington Elementary, Morton Middle School, and SCAPA Bluegrass. All No Idling

schools are recognized by KY Division for Air Quality. For a No Idling kit, contact Tresine.Logsdon@fayette.kyschools.us.

n. Rain Gardens

Gardening is a great way to get any classroom outdoors and interactive in the environment. That is why many schools are choosing to put gardens into the schoolyard landscape. There are many different types of gardens like vegetable butterfly or the lesser known rain gardens. A rain garden is simply a depression that captures runoff from impervious surfaces, such as rooftops, patios, driveways and parking lots, before it enters the storm water system. They are usually filled with native plants that infiltrate the soil with their extremely deep roots. They help to hold the water in the soil and recharge the groundwater while also filtering pollutants along the way.

Rain gardens not only offer hands-on lessons about gardening but they open up unlimited learning

opportunities. Topics could include, but are not limited to, watershed and storm water runoff, ecosystems, native plants, birds and insects, growing plants and soil science. Bluegrass PRIDE can help by leading lessons for schools that want to involve students in constructing and learning about rain gardens. Several schools including Athens Chilesburg Elementary, Beumont MS, Jessie Clark MS, Lansdowne Elementary, Bryan Station Middle School and Henry Clay HS have utilized LFUCG Stormwater Quality Incentive grants to fund the design, installation, planting and maintenance of school rain gardens.

To find local funding for a campus rain garden, contact Tresine.Logsdon@fayette.kyschools.us.

o. Recycling

100% FCPS schools participate in school-driven recycling. The average cost of a trash dumpster tip is $13.50. During the 2010-2011 school year, approximately 285 trash dumpsters were tipped each week in FCPS costing $3,847.50. As a result of school recycling, schools experience a reduction in the number of waste dumpster tips to 185 tips each week, a weekly savings of $1,161. For questions about recycling at your school, contact your Bluegrass Greensource Environmental Educator at 859-266-1572.

p. School Garden Coalition

There are currently 35 school gardens of all types and sizes in our schools and a great deal of enthusiasm among parents, students and teachers for outdoor classroom space that includes rain gardens, community gardens, vegetable gardens, sensory gardens, herb gardens, etc. In April 2011, the FCPS School Garden Coalition formed with the mission to foster communication and resource sharing among parents, teachers, students, community partners and district personnel to promote and support school campus gardens for improved student achievement, appreciation and respect for nature, nutrition knowledge, healthy life skills and student engagement**.** To view the School Garden Coalition website and view the SGC brochure, visit www.sustainability.fcps.net/school-garden-coalition.

Need community support for supplies or maintenance? Submit an **Outdoor Classroom Needs Assessment** available on the School Garden Coalition website (above).

q. Aquaponics in the Classroom

Nutrient cycling is a fundamental concept in ecology, biology and environmental science, but many students have a tough time visualizing how individual nutrients--especially nitrogen--cycle through complex natural ecosystems. Through a partnership with Beeca Self of **Foodchain**, schools are learning to build a comprehensive classroom aquaponics system to use as a teaching tool. Aquaponics is the combination of aquaculture (fish farming) and hydroponics (growing plants in media other than soil). The large mouth bass in an aquaponics system produce large volumes of ammonia-rich waste that nitrogen-fixing bacteria quickly convert to nitrite and nitrate that the plants need. The plants in turn filter the water by removing nitrates which is then returned to the fish tanks, an example of a symbiotic relationship-- nature's way of providing plants with the nutrients they need and fish with the clean water they require--when left undisturbed by humans. This system--monitored, maintained and eventually harvested by students--is used to demonstrate plant life cycles and structure, nutrient cycling, high-yield gardening, ecological issues, biodiveresity, and sustainable farming. If you are interested in exploring a partnership with Foodchain to incorporate aquaponics into your classroom, contact Tresine.Logsdon@Fayette.Kyschools.us.

r. Green Apple Day of Service

Fayette County Public Schools has been host to US Green Building Council's Green Apple Day of Service since the program began in 2012. In September 2012, Bryan Station Middle School piloted US Green Building Council's first Green Apple Day of Service by collaborating with over a dozen community partners including Locust Trace Agriscience Farm, Good Foods Coop, Bluegrass Youth Sustainability Council, Bluegrass Greensource to install four raised

garden beds and landscape around campus. 2013's Green Apple Day of Service expanded to three FCPS schools (Lansdowne Elementary, Millcreek Elementary, EJ Hayes Middle School) to complete outdoor classroom projects such as garden installations, picnic table assembly, pathway construction and bench installation. To learn more about participating in the 2016 Green Apple Day of Service (www.mygreenapple.org), contact Tresine.Logsdon@Fayette.Kyschools.us.

s. Student Wellness

The statistics speak for themselves: Kentucky is the 7th most obese state in the U.S for children, 9th most obese for adults. Currently 35.7% of youth in Kentucky are overweight or obese and 30% of KY adults are physically inactive. Student Wellness is a critical component of a school's sustainability initiatives. There are many ways for a school to comprehensively address student wellness, including enrolling in to assess your school's health and wellness, develop an Action Plan and apply for a National Healthy Schools Award. Easy ways to improve your school's health and wellness through a Student Wellness Plan include requiring:

- ✓ 20-minutes of recess for each elementary school student
- ✓ Healthy snack options during school celebrations
- ✓ Non-food rewards for student performance

To learn more about helping your school become a KY Healthy Schools Program, contact Tresine.Logsdon@fayette.kyschools.us or go to www.healthiergeneration.org and click on Take Action, Schools.

t. Siemens/Northwestern University FUSE Solar Roller Challenge

In partnership with Siemens, a global Energy Solutions company, and Northwestern University in Chicago, IL, Fayette County Public Schools is piloting the FUSE Solar Roller Challenge, an interest-driven program designed and developed by Northwestern. Fuse is designed to engage students in STEAM disciplines by "hanging out, messing around and geeking out" through an online, gaming (leveling up) interface that facilitates the hands-on design and build of a solar roller race car, windmill and other sustainable devices. Professional scientists, engineers, advanced undergraduates and graduate students are available as mentors and provide a real-world connection to the concepts learned and practiced through the challenges.

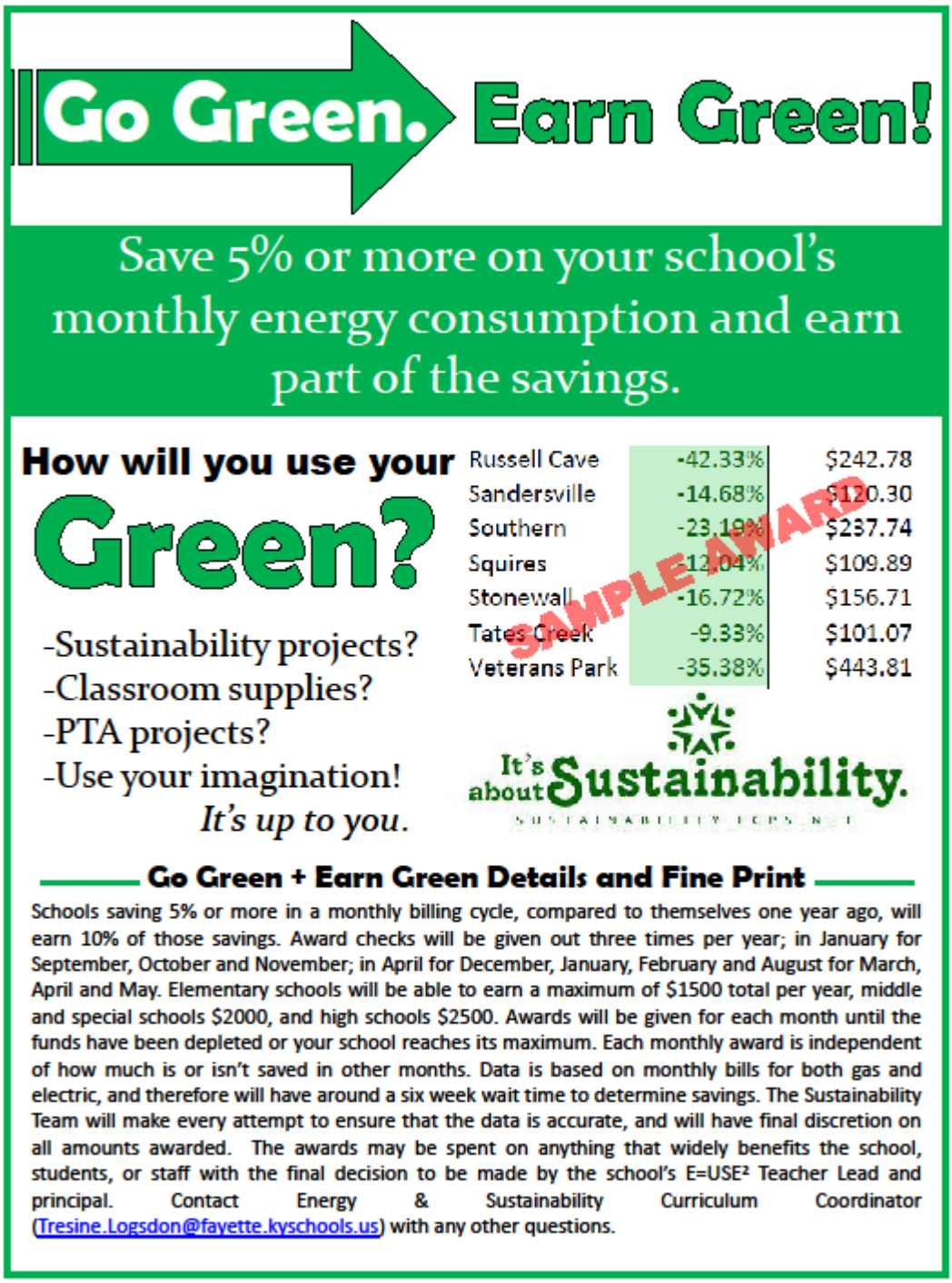
In Fall 2014, Fayette County was the first school district outside of Chicago to launch the FUSE program at STEAM Academy, Bryan Station High School and The Learning Center. At time of publication, the launch was still in developing stages. To learn how to get your middle or high school involved in the Siemens FUSE Challenge, contact Tresine.Logsdon@Fayette.kyschools.us.

IV. Funding for Sustainability Projects & Initiatives

Go Green + Earn Green is a program designed to reward and recognize schools for achievements in sustainability in energy efficiency. Each school that reduces overall energy consumption by 5% or more ***compared to themselves*** will **earn 10% of the savings** towards student-driven sustainability improvement initiatives.

Funds will be awarded to schools three times/year: September, January and May.

September: March-May
January: September-November
May: December-February



In addition to accessing project and school funds through Go Green + Earn Green or LFUCG Sustainability grants, there are a variety of fun ways to raise funds for your school's sustainability initiatives while simultaneously helping the environment. Below are some popular choices that require no capital investment.

Cans for Cash (www.cans4cash.com)

TerraCycle (www.terracycle.net)

Electronic device recycling www.ecophones.com

Planet Green Fundraising (www.planetgreenrecycle.com)

LFUCG regularly offers sustainability grants for school projects.

For a rain garden grant: www.lexingtonky.gov/index.aspx?page=2119.

For an EcoART grant: http://www.lexingtonky.gov/index.aspx?page=2108

To recycle Toshiba toners from printers, photocopiers or fax machines:
http://www.closetheloopusa.com/index.php?page=toshiba-register-usa

Please remember that FCPS has a Grant Office to support schools in grant research, writing and implementation. Procedures for developing and submitting grants are outlined on the Grants Writing and Accounting offices center located in the staff portal on the district website at https://my.fcps.net/financial-services/grants. You will need to login to access the site.

To apply for a grant, please complete and submit and Intent to Apply form and secure your principal's OK for you to proceed. The Intent to Apply form can be accessed on the grants website. If you have questions about securing or facilitating a grant for a project at your school, please contact Susan Decker Davis at Susan.Davis@fayette.kyschools.us or 381-4228.

E=USE^2 Classroom Checklist

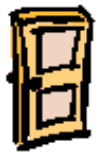
Lights out

- Before school
- After school
- Special/Planning Period
- Lunch

Monitors, projectors, printers off

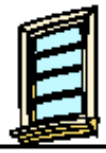
Personal appliances off & unplugged

- when not in use



Doors closed

- During class
- When room is unoccupied



Windows closed

When heat or cooling on

E=USE^2 . . .

- **Lights off** when sun provides enough light
- **Blinds/shades closed** to reduce heat from sun on warmer days
- **Blinds/shades open** to admit heat from sun on cooler days
- **Consolidate** mini fridges, microwaves and coffee makers
- **Room arranged** for best energy usage
- **Thermostat** No electronic equipment within five feet
- **Reduce, reuse and recycle**
- **Use power strips** if you have one to eliminate phantom loads
- **Use CFLs** in desk lamps

It's about kids.

Plug-Load Worksheet

Student name(s):

Month:

Average Electricity Cost = $0.09 per kWh

1000 watts= 1 kWh (kilowatt hour)

	A	B	C	D	E (C x 30 days)	F (DxE/1000)	G # mths in use	H (FxG)	I (H x $.09)	J (I x A)
Equipment	Quantity In Use	Phantom Load (yes or no)	Typical Use, Hours/Day	Average Running Wattage	Total running hours/Month	Monthly kWh	Months/ Year	Yearly kWh	Annual Cost Each	Total Annual Cost
Ex: Computer	*8*	*Yes*	*12*	*110*	*12 hrs x 20 days= 240*	*110 x 240/ 1000= 26.4*	*10*	*264*	*$23.76*	*$23.76(8)= $190.08*
Ex: Monitor	*8*	*Yes*	*12*	*18*	*12 hrs x 20 days= 240*	*18 x 240/1000=4.32*	*10*	*43.2*	*$3.88*	*$3.88(8)= $31.04*
Ex: Microwave	*1*	*Yes*	*.5*	*1650*	*.5 hrs x 20 days=10*	*1650 x 10/1000= 16.5*	*10*	*165*	*$14.85*	*$14.85*
Ex: Mini fridge	*1*	*Yes*	*12 (compressor on ½ time)*	*400*	*12 hrs x 30 days= 360*	*400 x 360/1000=144*	*10*	*1,440*	*$129.6*	*$129.6*
TOTAL										

*Complete a Plug Load Survey on 2 classrooms, 1 office and 1 non-classroom (total of 4 copies of this form).

FCPS E=USE^2
School Light Level Survey

1. Check out an FCPS foot candle light meter from your FCPS Energy Manager: Tresine.loosdon@fayette.kyschools.us.

2. Flip the top black switch to ON and the bottom black switch to A. Carefully unscrew the lid off of the light sensor and complete the survey below.

3. Be sure to hold the sensor parallel to the floor/ceiling and collect your data with the sensor about 3ft from the floor (desk level).

	Location Description	Foot Candle (Fc) measurement	Minimum Requirement (Fc)	Opportunity for energy conservation?
Foyer Area 1			25	
Foyer Area 2			25	
Corridor/Hallway 1			25	
Corridor/Hallway 2			25	
Corridor/Hallway 3			25	
Office Space 1			50	
Office Space 2			50	
Teacher workroom 1			50	
Classroom 1 (not lab, art or computer)			75	
Classroom 2 (not lab, art or computer)			75	
Gym			Elem: 50 MS/HS: 75	
Cafeteria			50	
Library			75	

Summarize your findings below and discuss potential energy conservation ideas with your E=USE^2 Team.

Auditor(s):

E=USE^2 Patrol Record – Secret Audit / Monthly Patrol (*circle*)

*Please keep completed copies in your binder.

Patrol date-								Totals	
Classroom	**Time**	**Lights**	**Computers, monitors, printers, projectors**	**Personal Appliances**	**Recycling Bins Utilized**	**Doors Closed**	**Windows Closed**	**✓**	**X**
Non-classroom	**Time**	**Lights**	**Computers, monitors, printers, projectors**	**Personal Appliances**	**Recycling Bins Utilized**	**Doors Closed**	**Windows Closed**	**✓**	**X**

Time Codes:
BS= Before School
LR= Lunch/Recess/Planning Period
AS= After School

Record Key
✓= energy being conserved ☺
X = energy in use/no people ☹

Total ✓:

Total X:

E

Fayette County Public Schools E=USE^2 Team

STUDENT RECOMMENDATION

SCHOOL:

Student's Name:_____

Grade:_____**Homeroom/1st Block Teacher:**_____

Teacher Submitting Recommendation:_____

Teacher's Signature:_____

The above named student is applying to be a member of our school's E=USE^2 Team. Team members will be responsible for planning and implementing sustainable practices and school improvement projects 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 to

_____ **by** _____ **.**

Thank you!

Fayette County Public Schools E=USE^2 Team

APPLICATION

SCHOOL:

Student's Name:_____

Grade:_____ **Homeroom Teacher:**_____

Being selected to be a member of the E=USE^2 Team is an honor and should be taken seriously. Serving as a student representative on your school's E=USE^2 team will provide many leadership opportunities. You will be expected to participate in activities planned by the E=USE^2 team.

With this application, attach a short statement, telling WHY you would like to be a member of the E=USE^2 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 E=USE^2 Team.**

Parents: As part of this program, video tapes, photographs, and web page photos are often produced by the E=USE^2 team, school personnel, and outside media. By signing below you are giving permission to include your child's photo or classwork in video tapes, photographs, newspaper articles and web pages.

_____ _____

(Student's Signature) ***(Date)***

_____ _____

(Parent/Guardian's Signature) ***(Date)***

The Value of Water					
Activity	**Exemplary (6)**	**Proficient (4)**	**Partially Proficient (2)**	**Incomplete (0)**	**Score**
Introduction (6 pts)	The introduction is compelling and provides motivating content that hooks the viewer and introduces the message *Value of Water: From River To Tap*	The introduction is clear and coherent and evokes interest in the topic and response from listeners. Message is moderately introduced.	The introduction shows some structure but does not create a sense of what is to follow. Is somewhat appealing to the audience. Message is alluded to, but not clearly.	The introduction does not orient the audience to what will follow. The sequencing is unclear and does not appear interesting or relevant to the audience. Message is not introduced.	
Message (12 pts)	Message is directly related to *Value of Water: From River To Tap*; frequent and clear references are made to facts; audience will learn from this video	Message is mostly related to the *Value of Water: From River To Tap* ; some facts and references are included; audience is likely to learn from this video	Message is occasionally related to the *Value of Water: From River To Tap*; few facts and references are included; audience may learn from this video	Message is not related to the *Value of Water: From River To Tap* ; no facts and references included; audience are not likely to learn from this video	
Content/Organization	Clear statement of	Accurate supporting	Content does not present a	Content lacks a central	

(12 pts)	purpose; creative and compelling; rich variety of supporting information contributes to message *Value of Water: From River To Tap*; includes motivating questions; messages or events presented in logical order	information that contributes to understanding of message *Value of Water: From River To Tap*; details logical and persuasive; clear point of view and progression of ideas	clearly stated message *Value of Water: From River To Tap*; message is vague; supporting information does not aligned with message; content disconnected from message; no unifying main idea	message *Value of Water: From River To Tap*, clear point of view or logical sequence of information; supporting information irrelevant to overall message; viewer is unsure what the message is; little persuasive information	
Use of Media (6 pgs)	Graphics, sound and/or animation assist in communicating the message and enhances high-impact message; multimedia elements work well together and demonstrate synthesis; graphics reinforce key points	Proper size and resolution used for images and graphics; multimedia depict material and assist the audience in understanding the message	Some of the graphics, sounds, and/or animations seem unrelated and do not enhance the message; images size and resolution are distracting; multimedia elements support the message occasionally	Graphics, sounds, and/or animations are unrelated to the message. Graphics do not enhance understanding of the message or are distracting decorations that create a busy feeling and detract from the message	
Video Editing (6 pts)	Video moves smoothly from shot to shot; variety of	Good pacing and timing; variety of	Transitions are choppy between scenes;	Unedited with no transitions and raw clips	

	transitions to assist in communicating the message; scenes flow seamlessly; digital effects used appropriately for emphasis	transitions are used	transitions detract from message; unnatural breaks; digital effects distract from the content		
Audio and Voice Editing (6 pts)	Audio is clear and effectively assists in communicating the message; message is communicated with enthusiasm, purpose, proper voice projections, appropriate language and clear delivery	Audio is clear, but only partially assists in communicating the message; message is communicated with proper voice projection, adequate preparation and delivery	Audio is inconsistent in clarity (too loud/too soft/garbled) at times and insufficiently communicates the message; intermittent success communicating message due to weak voice projection and clarity	Audio is cut-off and inconsistent; message poorly communicated due to weak voice projection and/or clarity	

CONTACTS

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Wesley Bullock
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KY Environmental Education Council
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Regional Coordinator, KY NEED
859-585-5529
tcvitkovic@need.org

Acknowledgements

Some content in this manual has been adapted from the following sources.

The NEED Project
www.need.org

SERT Handbook, Montgomery County Public Schools
www.greenschoolsfocus.org

Energy Rules, Poudre School District
www.psdschools.org

Energy Savers, Wake County Public School System
www.wcpss.net

Watt Watchers of Texas
http://wattwatchers.org

For additional resources go to
www.need.org/links.php
www.greenschools.ky.gov