

Green Bay East High

1415 East Walnut Street
Green Bay, WI 54303

Energy Conservation Action Plan For KEEP

May 18, 2009

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I. Action Plan Summary:

The purpose of this action plan is to increase energy consumption awareness among teaching staff at East High. Consumption awareness with easy conservation tips may decrease the overall consumption of electricity in our classrooms.

Implementation will begin the last 2 weeks of the 08/09 school year. I think I will have more success when the teachers are experiencing more daylight. Too many teachers need more foot-candles in the room during shortened winter days. The follow through emails will begin next school year after the initial introduction this year.

The results will be compiled from student gathered data. I'm anticipating emailed testimonials and feedback from staff as well.

The budget will be the cost of tootsie rolls to be distributed by the "lightning bugs" (aka: students gathering data).

II. Introduction to the Audience:

The audience will be the teaching staff at East High, Green Bay Wisconsin 83 classrooms (does not include cafeteria, auditorium, gyms, office space or workrooms)

94 teachers (does not include support staff)

We have energy consumption reminders sent to us periodically by the building engineers. The first staff meeting of the year also includes a reminder to consume less energy. Stickers have been placed on light switches in classrooms. Staff is reminded of no small appliance policy every time we have a fire drill due to burned popcorn in a microwave. Many of my colleagues are not motivated by the thought of saving the district money on energy bills. (Even though this translated directly to the solvency of the district and therefore the security of their jobs.) My thought is that a simple list of facts relating classroom lighting choices to coal burned and air emissions will strike a cord with my colleagues. Habits are difficult to change and are best addressed one simple choice at a time.

III. Statement of the Problem:

I believe the staff has "compassion fatigue" and few have remaining resources for considering their daily energy consumption in the work place. We are often overwhelmed with huge energy conservation initiatives and mandates from the district. It seldom translates into changed behavior by the staff. My goal is to have a short, sweet and simple incentive program to impact one behavior that is completely

within the classroom teacher's realm of control. Use of classroom lighting. At first glance, this goal may appear to lack ambition. My thought is that a small, attainable goal will have more impact than a doctoral thesis scale project that will never be implemented. Small and real vs. large and fantastical. Perhaps education and tootsie rolls can attain what mandated district initiatives have not. We need to create a personal sense of cost and benefit in order to change our consumption habits.

IV. Project Goals and Objectives:

Educate the staff on the energy consumed by lights in the classroom.

Motivate the staff to push themselves out of the habits and comfort zones of foot-candles in their rooms.

Milestones include:

Initial email to educate about lighting in the classroom.

Student surveys of lighting used in rooms.

Rewards for lights out.

Follow up emails periodically to check for changed behavior.

Intermittent rewards to serve as friendly reminders and encouragement.

V. Methods & Timeline:

Email staff with data regarding single, double and triple banks of bulbs being used in the room. Kwh, lbs of coal and CO₂ calculations will be shared. May 29

Send out students (ie: Lightning Bugs) to "catch" teachers with banks of lights turned off in their classroom. June 1-5

Reward teachers for lights out.

Fall 09/10 email reminders and continue intermittent rewards.

VI. Evaluation Criteria & Process:

I've attached the data record sheet for "lightning bugs" and the initial email to introduce the project to the staff.

The student data will be compiled. I expect to receive emails from interested colleagues in response to follow-up emails. There will not be a quantitative assessment of changed behavior with this project. Awareness is difficult to measure.

VII. Budget:

The cost of bags of tootsie rolls for the "lightning bugs" to reward teachers caught in the act of conserving electricity.

VIII. Communication Plan:

I've attached the email being sent to staff to introduce the project.

I've attached the check-list being used by lightning bugs to check on rooms.

Greetings colleagues,

I took a very interesting class through Focus on Energy called “Energy and Your School”. I would highly recommend the KEEP (K-12 Energy Education Program) classes taught by Scott Liddicoat at Southwest High school. Watch for emails regarding the course offerings next year. I’d like to share some facts taught regarding the electricity we use in our classrooms.

Did you know that each florescent tube in your room is a 32-watt (.032Kilowatt) bulb? Each bank of lights has 3 bulbs. If you use all three bulbs for a 7.5-hour day, you’ve used .72KWH of electricity for just one bank of lights.

$$(.032 \text{ Kw} \times 3 \text{ bulbs} \times 7.5 \text{ hour} = .72\text{KWH})$$

My room has 20 banks of lights. So I use 14.4 KWH per day.

$$(.72\text{KWH} \times 20 \text{ banks of lights} = 14.4 \text{ KWH per day})$$

5 days per week for 38 weeks uses 2,736 KWH per year

$$(14.4 \text{ KWH} \times 5 \times 38 = 2,736 \text{ KWH per year})$$

The average price we pay for electricity in our school is 10 cents per KWH.

It costs \$273.60 per year for lighting my classroom.

2/3 of our school’s electricity comes from burning coal. The rest is nuclear (20%), some renewable (mostly hydro) and various other sources.

That translates into 2,189 lbs of coal burned for just my classroom.

$$(2736 \text{ KWH} \times 2/3 \times 1.2 \text{ lbs coal burned/KWH} = 2,189 \text{ lbs of coal})$$

Burning lights in my classroom emits 4,013 lbs of air emissions per year.

$$(2736 \text{ KWH} \times 2/3 \times 2.2 \text{ lbs air emissions (Co}_2, \text{ Sox, No}_x, \text{ particulates/KWH} = 4,013 \text{ lbs of air emissions})$$

I accepted a challenge presented in our class to lower the lighting level in my classroom. It was so difficult to change the habit of hitting the switches that I actually taped the switches to the middle bank of lights off. I found it uncomfortable at first to have dimmer lighting in the room, but I was acclimated to the change by the end of the first week. On rainy days, I still turn on all of the lights to raise the energy level of my students.

Would you be interested in taking a similar challenge to use less electricity? (aka: burning less coal) for your classroom? My students will be keeping a tally of lights burning in their classrooms through out the day. They will record the banks of lights and if you have 1, 2 or three bulbs burning during their inspection. Our “lightning bugs” will be awarding small prizes to teachers who have lights out when gone from the room and fewer banks running while in the room. The rooms are designed to have proper student work level lighting with 2 bulbs per bank turned on. The third bulb is only meant for special circumstances, not daily work.

Thank you for participating in our efforts to save the world, one small decision at a time.

Thank you for allowing me to share this information. I’ll be emailing the lightning bug results in the near future.

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