Joann Engel
NR 734: School Building Energy Efficiency Education
Fox River Academy/Appleton Area School District
Teacher Grades 6, 7, 8th/All Subjects
Title: Power Up With Best BETs (Building Energy Teams)

1. Action Plan Summary

Through the Best BETs project, the Fox River Academy's project goals include reducing energy usage within the Appleton Area School District by holding staff development opportunities during the remainder of the 2008-2009 school year and the 2009-2010 school year. As part of this project, we hope to get 50% of the schools in the district to have an Energy Team which will include teachers, administrators, maintenance people and students to work at reducing their energy consumption within their own buildings. The goal is to reduce energy use in the district by 5%.

In order to do this, Sandra Vander Velden and Joann Engel will provide a series of classes for district points to Appleton Area School District staff. The final outcome of the project is to have school buildings develop their own Action Plan for reducing energy consumption.

2. Past Accomplishments

Since baseline data was collected in 2005, the lighting throughout the building has been retrofitted with T8 fluorescent bulbs, all exit lamps are now LED lamps, some areas of the main teaching building have been equipped with motion sensing lighting, and the district heating is controlled through a central office. For the past 3 years, our students have entered the KEEP Bookmark contest. Students participated in a writing campaign to encourage the food service provider to switch from disposable Styrofoam lunch trays to reusable plastic ones; the food service provider has since made this change. Additional classroom space was made available for Fox River Academy grades 7-8. An underutilized building was acquired for both classroom space and as a teaching resource on efficient energy and material use. The building called, the Green Teaching Building, features low flow toilets, efficient doors, flooring recovered from other building sites, as well as a rain garden. A solar PV system will be installed for supplemental electricity generation this spring. The school participated in the Bright Idea Fundraiser in 2007. Two teachers that participated in a KEEP course have integrated some energy activities into their classroom, such as "Energy Cycle" and "Sun-wich."

3. Statement of Problem or Need

For the fiscal year ending 2008, the District spent $1.6 million for electric charges for the schools and buildings. This amounts to approximately $1.00 per square foot. While a larger district than Appleton, the Green Bay School District has successfully decreased their actual electric charges from the $1.00/sq. ft. range to $.82/sq.ft for electric charges. Some of the decrease in electric charges has been the result of upgrades to more efficient lighting and appliances, but the change in behaviors of district employees has had the most significant impact in decreasing these charges. KEEP courses are offered in the district periodically, giving participants opportunities to see, firsthand, both efficient and inefficient energy practices in schools and homes. The problem remains that small groups or individuals go back to their teaching assignments much the wiser and conservative, but other staff remain "unenlightened." Regular reminders through district-wide emails and announcements by building principals are given to staff to conserve energy. Despite these reminders, it is estimated that on any given night there are up to five hundred computers left in sleep mode across the district at a cost of $104,400 annually—the equivalent of the salary and benefits for 2 beginning level teachers. Old model refrigerators and other appliances frequently make their way into staff lounges when they are deemed no longer suitable for homes of employees. While these appliances seem to come at the "right" price, district personnel are frequently unaware these appliances actually come with a large user price. Lighting, making up more than 60% of the electrical energy bills in most school buildings, frequently is left on from the moment staff report to their work areas until they leave at the end of the school day. In our own building hallways, restrooms, and lounges are left fully illuminated whether occupied or not.

Our project will address this problem by providing AASD staff with needed staff development hours and/or experiences necessary for individual Professional Development Plans (PDPs) on district energy consumption and related costs. Those schools who wish to be one of the Best BETs will be guided in making assessments of their own sites and will examine the data to determine areas for improvement. The facilitators, Joann and Sandy, will assist the teams in developing building-wide plans to reduce energy use. Program participants will design and implement energy efficiency lessons for use with students. Through a cycle of education, assessment, action, and celebration of success, the schools will decrease their energy bills by an average of 10%. Because the participating schools will develop their own means for reducing or making more efficient use of available energy implementation the plans will be more successful and palatable for implementation and compliance than plans imposed by district supervisors.

4. Project Goals and Objectives

The goal of the Best BETs project is to reduce energy usage across the district by 5% (due to 10% reduction by half of the district schools) by the start of the 2010-2011 school year.

Objectives: To bring teams from at least 50% of all district schools to learn about energy use, conduct an energy site assessment, design and implement a site energy efficiency plan, and to educate students in energy efficiency.

Goal: To involve the local community in energy efficiency practices.

Objective: To provide information and data sheets on Fox River Academy website
Objective: To host community information sessions which highlight the efforts and successes of the Best BETs.

5. Timeline
6. Evaluation Criteria and Process

Action	Method	Responsible Person(s)	Date	Measurement of Success
Staff Development Best BETs Program created	Following district guidelines for making the workshop available for District SD hours	Sandy Vander Velden will contact Lou Chicquette, Director Staff Development; Bob Zuehlsdorf, Facilities and Operations Supervisor; and Becky Walker, District Science Coordinator to establish dates and locations for the Best BETs Workshop	January 31, 2009	Program is posted to District website
Publicize Best BETs Program	Develop a flyer Create "buzz" through District email Contact local media	Sandy and Joan will draft and publish a flyer, emails, and a press release to the Post-Crescent.	By January 31, 2009 Mid January-Mid February 2009 Beginning February 2009	Teams from 10 schools will sign up for Staff Development program
Initial Best BETs Team Work	Bring teams together to outline the goals and expectations of the program; assign	Sandy and Joann with the help of Bob Zuehlsdorf and Becky Walker, will plan and facilitate of	Mid February 2009	Teams sign attendance verification sheet; 10 teams leave with assessment forms, tools. Participants will complete a

	site assessment	this event, attending to all logistics including material preparation.		survey on the effectiveness of the initial program session.
Second Session Best BETs	Teams bring back results of site assessment; begin development of action site action plan, including Energy Education for students	Joann and Sandy will plan and facilitate of this event, attending to all logistics including material preparation.	First week of March	Teams sign attendance verification sheet; 10 teams leave with a written plan for implementation and plan for assessment of early implementation at the site level.
Third Session Best BETs	Teams bring back results of early implementation and energy education initiatives; celebrate early successes; plan for next steps	Joann and Sandy will plan and facilitate of this event, attending to all logistics including material preparation.	First week of May 2009	Teams sign attendance verification sheet; 10 teams leave with copies of energy education plans developed/used at each site; plan for assessment of early implementation at the site level. Teams will evaluate the staff development program based on its stated goals, delivery of information and technical assistance, and expectations of participants.
Community Involvement	Make energy efficiency information for the homeowner on the Fox River Academy website Host evening informative session on efforts of Best BETs.	Joann and Sandy with School's webmaster Joann and Sandy will plan and deliver the programming of this event, attending to all logistics	Mid March Mid September	Track hits to this specific webpage; Obtain site energy usage for the Best BETs sites; track number of emails of inquiry; attendance sign in

7. Budget

EXTECH Pocket Light Meters	68.60 x 10	$686
Kill A Watt Electricity Usage Meter	$19.49 x 10	$195
Infrared Laser Thermometer	$99.95	$100
Duplication of print materials	$60	$60
Refreshments	$200 per session x 3	$600
Salary for planning Engel and Vander Velden	$25.00/hour x __12 (four each) for 3 sessions hours	$600
Fringe benefits for Engel and Vander Velden	$4.50/hour x 12 (four each) for 3 sessions	$54
Total		$2295