"Green Daze" 2009-2010
Franklin Middle School's Energy Action Plan
NR 734: School Building Energy Efficiency Education

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Grade level / subject area: Grade 6 / Physical Science / Language Arts / Math
Grade 8 / Social Studies
Southeast Asian Counselor

1. Action Plan Summary

Project Purpose: To make staff and students at Franklin more energy efficient.

Implementation:
The Energy Committee (us) will be contacting staff each week with one of the following energy education handouts or energy saving challenges.

- "Watt's up?" -Educate staff and students on how to save energy.
- "According to Jim"-Staff education for building energy saving tips.
- "Where in the world is Jim Weisner?" -Energy tours of school/Green Daze
- "Just for Fun. Let's…"-Challenge activity for staff and students.

Results: Energy savings habits are formed along with cost savings for district.

Total Budget Amount: $500.00

2. Audience

History and past accomplishments, especially as they relate to this project:
Building engineer has:
- Removed small appliances
- Put up signs to save energy
- System upgrades

Service area/population served: Franklin Middle School Staff and Students

3. Statement of Problem or Need

Outline current resources that address this problem and identify gaps:
- District energy plan/no one has read plan.

Describe how my project will fulfill these goals:
- If staff and students are educated and active, energy should be saved at Franklin.

4. Project Goals and Objectives

Provide the specific goals you intend to achieve:
- Educate staff on costs related to energy use.
- Create "Green Daze" to help save on energy bill
  - "Green Daze" notices will be sent out to all staff on the 14th day of each month as reminders to staff that the meter is being read tonight.
  - We are hoping to get staff t-shirts as a visible reminder to be worn on the 14th.
- Create awareness of areas in school with inefficient energy use and educate ways to improve efficiency.

Note the milestones I will reach while meeting those goals:

- Have Franklin's staff and students get involved in saving energy at Franklin to lower our energy bills as well as in our homes.
- Be aware of areas that we are not efficient and correct problem, if possible, immediately. If it is not possible to correct the problem immediately, the team and Jim Wiesner will research solutions and notify correct district staff to help solve the problem more quickly.

5. Methods and timeline

List what actions will be taken, and who will take them, to achieve project goals: Energy Committee will be responsible for gathering information and carrying out plan.

Establish a timeline for project activities:

- We plan to introduce and our project/plan at our first staff meeting.
- Each month we will rotate through energy saving activities/information dissemination
    - The rotation is as follows:
      Week 1: According to Jim
      Week 2: Green Daze/Where in the world is Jim Wiesner?
      Week 3: Watt's Up?
      Week 4: Just for fun. Let's …
- We have enough items for each category to fill the year (please see attachments)

6. Evaluation Criteria and Process

How will I measure the success of my project:

- Franklin energy wattage use decreases. We will compare energy bills with previous year bills to determine if a decrease has occurred.

- List what records and information I will gather to assess project success:
  Electrical spread sheets from DOB

7. Budget

Funding that might be needed to implement my plan (include as much detail as possible): T-shirts for staff and prizes for energy savers. Money will be needed to purchase these items. Also, we will need paper supplies to make copies of announcements and posters to be posted throughout the school.

Green Daze…

Just a friendly reminder…
the meters are being read tonight at all Green Bay Schools between midnight and 2 a.m.
Unplug, unplug, unplug…

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“Watts” up Doc?

Where possible, use compact fluorescent light bulbs. Those funny-looking bulbs produce the same amount of light by using 1/4 of the electricity. Plus, they last for years and years without burning out.

“Watts” up Doc?

Cooking a pot of rice for one hour uses 1000 watt-hours of electricity!
This equals 1 kilowatt-hour, or 1 kWh.

Last year Franklin used 610,320 kWhs!
Boy, that’s a lot of rice!

Our bill was $58,738.00 for electricity alone.

YIKES!

“Watts” up Doc?

Extra appliances Suck (energy)!

If each of us were to have a clock radio, a small fridge and a microwave it would cost the District $35.48 per staff member per year!

There are 1200+ teachers and hundreds more staff members in the District!

“Watts” up Doc?

Turn off monitors and computers in labs at the end of each hour.

Do this even if another class is scheduled to use the lab the next hour.

Sometimes, the lab is not used!

One computer turned on 8 hours a day costs $80 per year!

“Watts” up Doc?

U.S. traffic signals use nearly 3 billion kilowatt-hours of electricity. To generate that much electricity requires about 1.4 million tons of coal. An estimated 3-4.5 million traffic signals in the U.S. consume approximately 990 kilowatt-hours of electricity each year. Some cities are turning to light-emitting diodes (LEDs) which can cut energy use by 80-90 percent. In Sacramento County, CA., a plan to replace traffic signals at 118 intersections is expected to save the county $67,000 a year in electricity costs.

“Watts” up Doc?

Water running from a faucet for five minutes uses energy equivalent to that needed to power a 60-watt light bulb for 14 hours.

“Watts” up Doc?

In most homes the refrigerator is the second-largest user of electricity (13.7%), right after the air conditioner. The main way to save money with your fridge is to use an efficient model. A 1986-era fridge uses 1400 kWh a year, while a post-2001 fridge uses only 500 kWh -- a 64% savings. And the *most* efficient fridges use as little as 200 kWh. Here are some sample yearly costs to run various fridge, based on the U.S. average price for electricity of 10¢/kWh:

- **$140 - Old 1976-86 fridge** (1400 kWh/yr.)
- **$50 - Post-2001 fridge** (500 kWh/yr.)
- **$43 - Post-2001 Energy Star fridge** (425 kWh/yr.)

“Watts” up Doc?

A washing machine uses about 0.256 kWh per load. At the national average of 11¢/kWh, that's $0.03 per load for electricity. The machine also uses about 40 gallons of water. At a national average of $2.81 per thousand gallons, that's $0.11. So our costs for electrical and water are $0.03+$0.11 = $0.14.

Total cost per load (electricity + water + water heating)		
Wash / Rinse setting	**Electric water heater**	**Gas water heater**
Hot / Warm	69¢	52¢
Hot / Cold	50¢	39¢
Warm / Warm	50¢	39¢
Warm / Cold	32¢	27¢
Cold / Cold	14¢	14¢

A front-loading washer costs 7¢ to 34¢ per load.

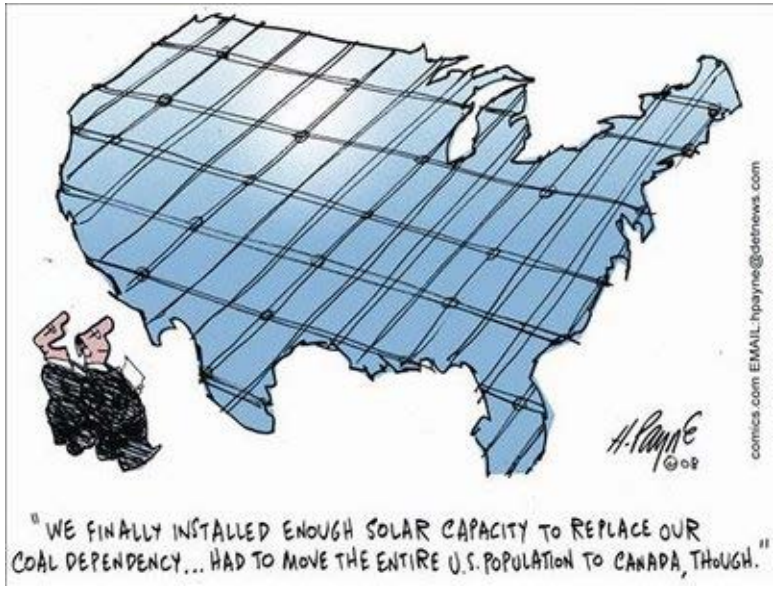
“Watts” up Doc?

How much electricity do computers use? A typical desktop computer uses about 65 to 250 watts.

Apple iMac G5 w/built in 20" LCD screen	
Doing nothing	97 watts
Monitor dimmed	84 watts
Monitor sleep	62 watts
Copying files	110 watts
Watching a DVD	110 watts
Opening a bunch of pictures	120 watts
Computer sleep	3.5 watts

“Watts” up Doc?

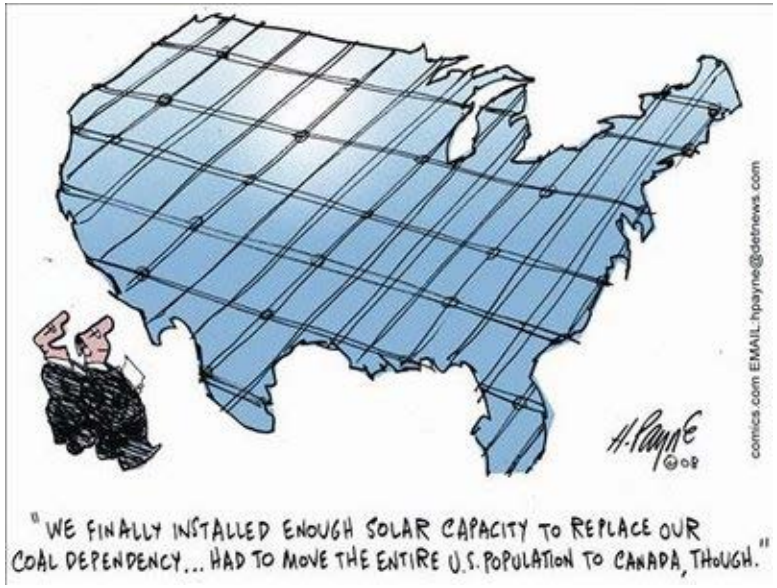
A window unit AC uses 500 to 1440 watts, while a 2.5-ton central system uses about 3500 watts. That's a lot of energy. A floor fan uses only 100 watts on the highest speed, and ceiling fans use only 15 to 95 watts depending on speed and size.



Just for Fun. Let's....

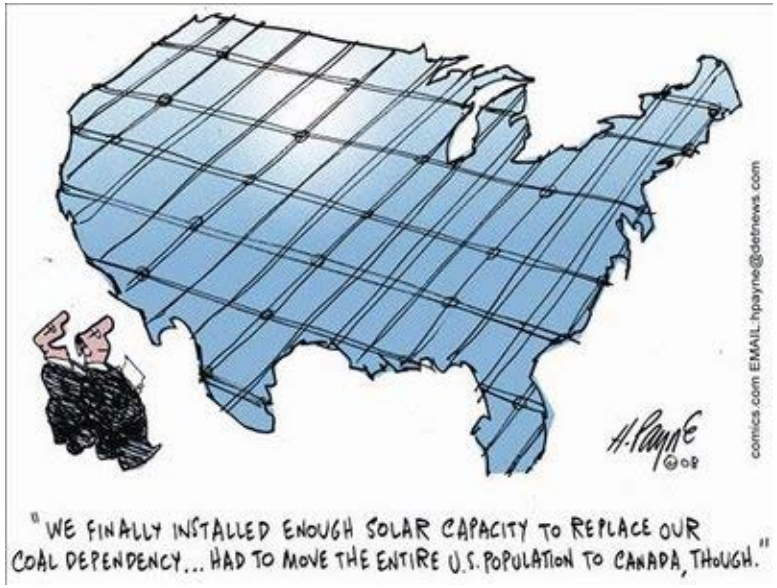
Unplug EVERYTHING in our rooms when we are not using them this month…"Phantom power" is haunting our building.

Your TV, for example, has a phantom load of between 5 and 15 watts, as it sits idle - but not sleeping - waiting for a command from the remote control.



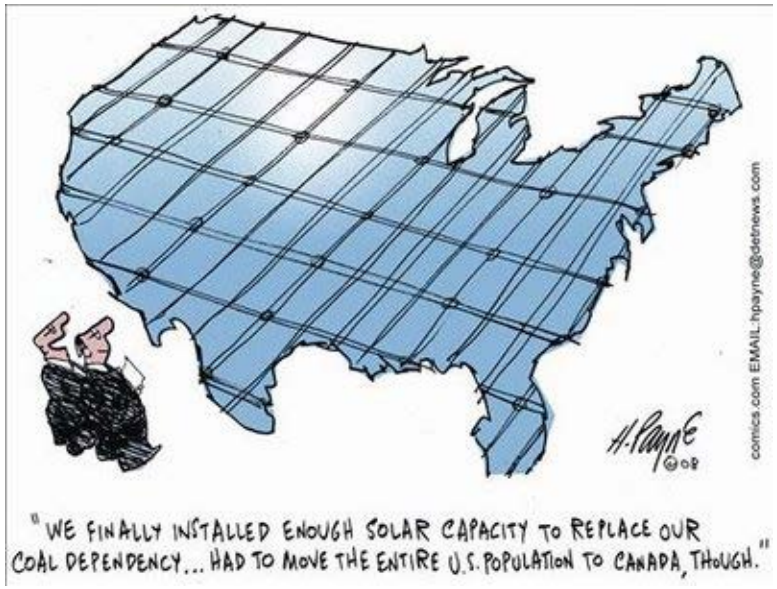
Just for Fun. Let's....

"Tape off" 2 light switches (old rooms) or use only one light switch (new rooms) for the month whenever possible. *Collectively* this simple act can save a lot of electricity.



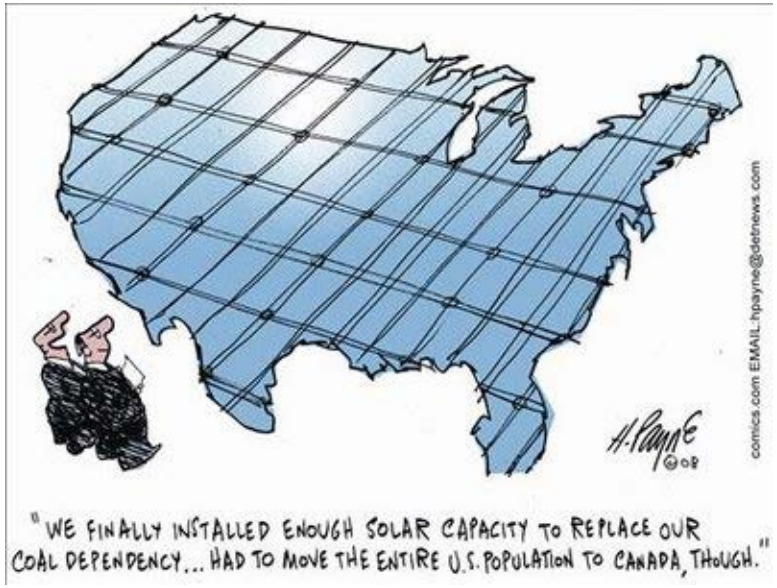
Just for Fun. Let's....

Shut our doors during the day. This way, it keeps the heat IN the classroom instead of flowing into the hallway.



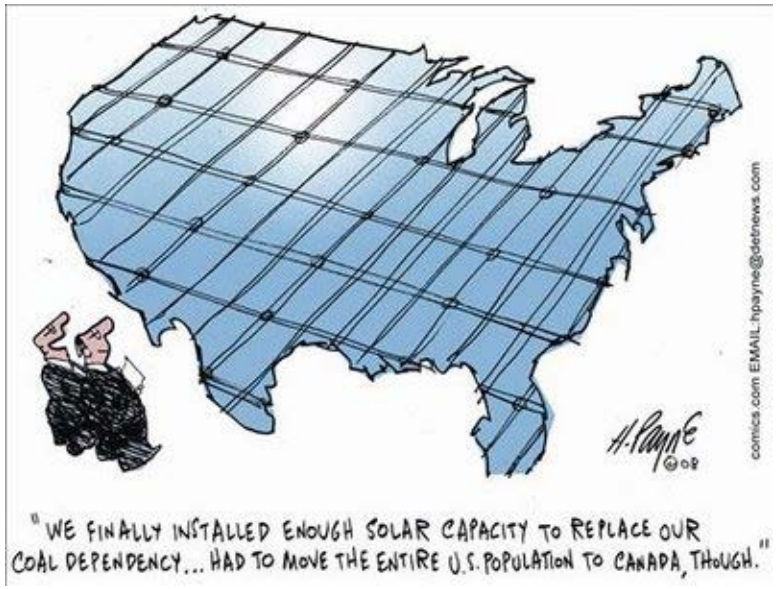
Just for Fun. Let's....

Try to teach 2 days a week *without* using the overhead projector or other electricity using devise. Just think of all the electricity that could be saved if this were done district-wide!



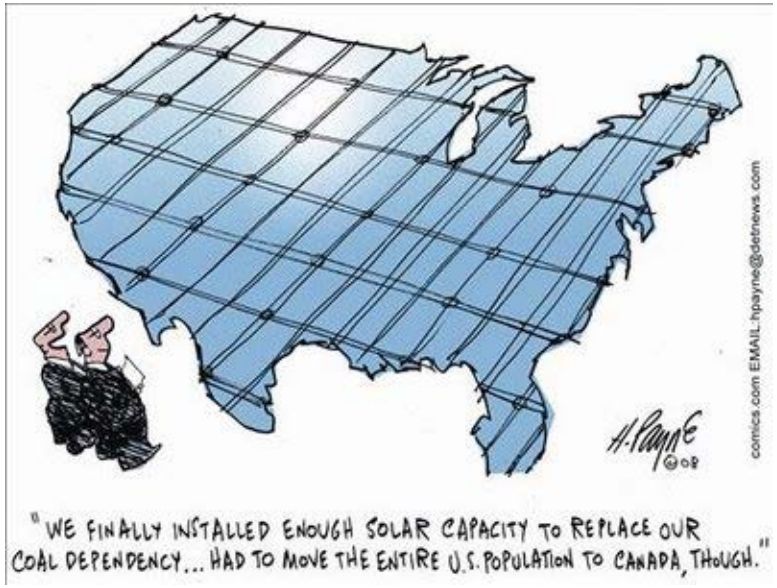
Just for Fun. Let's....

Try to cut down on electricity use when our school gets charged the most per kilowatt. Peak charges are from 8a.m. to 1 p.m., so if we can use ovens, kilns, air conditioners, fans, overhead projectors, etc. before or after these times the savings would be substantial.



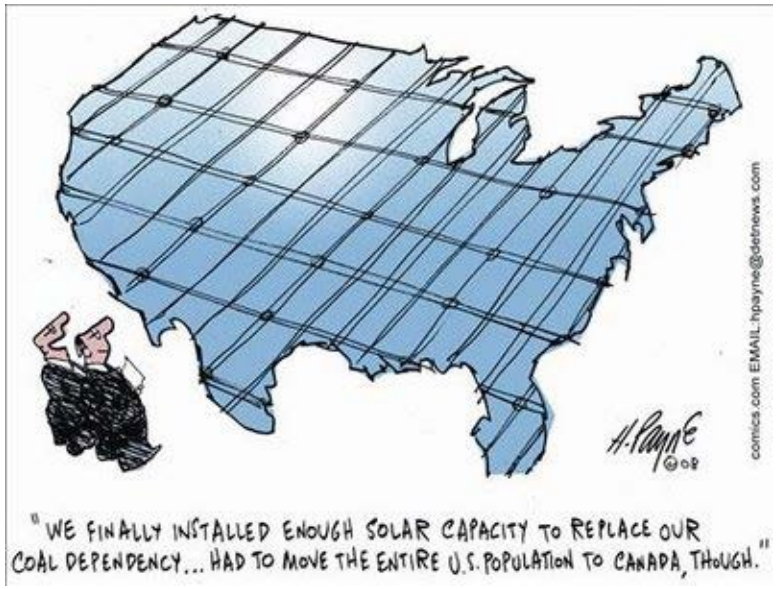
Just for Fun. Let's....

Try to collect 50 used/dead batteries or cell phones per staff member and recycle them here at school. Many of our friends and family members aren't even aware that these items are recyclable, so spread the word and start collecting.



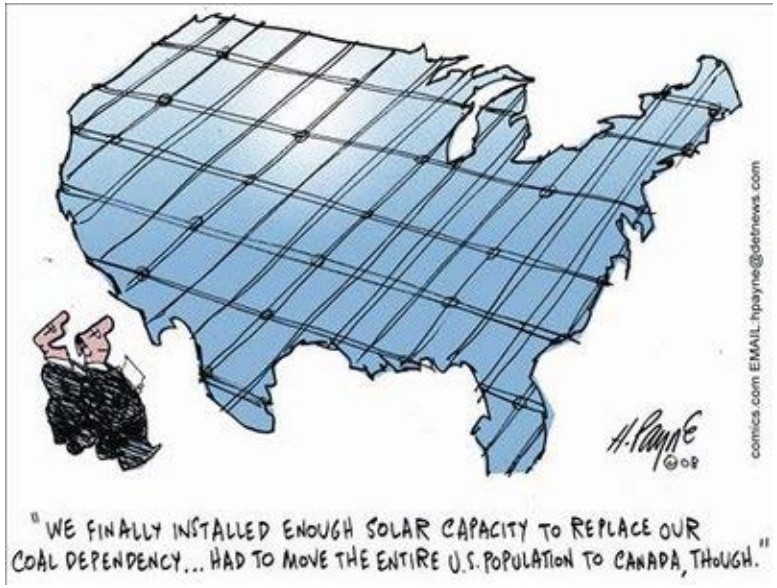
Just for Fun. Let's....

Try to cut down on electricity usage by turning off your computer screens between uses. When you are done taking attendance, submit attendance and turn off the screen when finished. If you are teaching a lesson in the computer lab, have students turn off their computer screen during instruction. "Screen savers use as much energy as when you are typing."



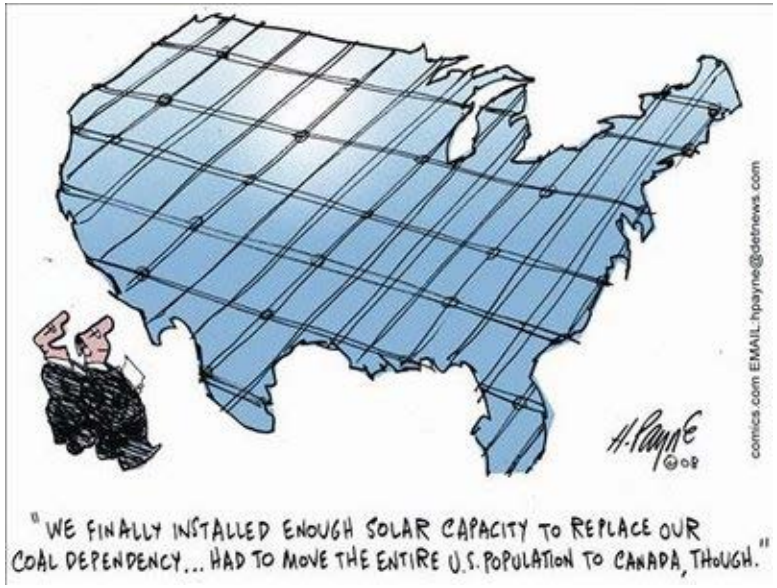
Just for Fun. Let's....

Try to cut down on electricity usage by plugging your appliances into an electrical strip and turning your power strip off at the end of the day. Using an energy strip will decrease the use of Phantom Power.



Just for Fun. Let's....

Try to cut down on fuel usage by carpooling one or more days this month. Make an effort to arrange a ride to school or work with friend or coworker.



Just for Fun. Let's....

Try to save aluminum cans for one month and bring to school on a given day to be recycled. Each student or staff member that brings in cans will receive a prize.

"Recycle cans, glass, and paper. The energy saved from one aluminum can will operate a television set for three hours." "It takes 20 times more energy to make an aluminum can from new materials than from recycled materials."