Step 5: Implement the Energy Action Plan

Everybody’s Energy Action Plan will be a little different, so here’s where the Guide to Energy Savings becomes a source for ideas more than a step-by-step workbook. See what ideas will work for your school! **Step 5 includes:**

- Student Power Patrols
- Classroom Energy Surveys
- Engineer Engagement
- Day-lighting
- Using Desk Lamps
- De-lamping
- Smart Energy Planning
Step 5: Implement the Energy Action Plan

“Hey, you...turn off the lights!” Smart use of lighting, especially shutting down rooms when they’re not in use, is an easy and visible way for everyone to get involved.

Students Have the Power!

Sometimes change happens slowly. People might need an extra set of eyes to make sure lights and appliances are being turned off. Well, how about a dozen sets of eyes? Consider forming a student-led Power Patrol at your school. Here’s a little how-to:

1) The Energy Team meets with the principal and goes through the basics.
   - Which students will make up the Power Patrol?
   - When will the Power Patrol do their rounds?
   - Who will be the Power Patrol Coordinator?

2) Decide what the Power Patrol will be looking for.
   - Lights left on?
   - Computer monitors left on?
   - Blocked heating vents?

3) Decide how the Power Patrol will let people know what they find.
   - Thank you notes?
   - Reminder stickers printed on labels?
   - Classroom energy checklist?

4) Introduce the Power Patrol to the school, so students and staff know what to expect.
   - Use morning announcements
   - Hang student-designed posters
   - Organize an energy assembly

5) Power Patrol regularly walks the school, finding ways to save energy!

Clever Classrooms

Each classroom can be smart about saving energy. The trick is to know how much energy each room can control. Have the Energy Team hand out and collect “Classroom Energy Survey.” (page 5)

You might find that just by asking teachers about classroom energy use, you raise awareness and reduce school energy use.
Step 5: Implement the Energy Action Plan

These are just some ideas for implementing your Energy Action Plan. Be creative. Have fun! And if you need more ideas or assistance contact energy@cps.k12.il.us

Interview an Engineer

Of all the educational tools, the largest, most expensive, and arguably most important is the physical building itself. And no one knows the building better than your school’s building engineer.

Consider bringing the building engineer in to talk to the Energy Team, environmental club, or individual class. Students can learn about how buildings operate, the energy issues that come with large structures, and being a professional building engineer.

The worksheet “Interview an Engineer” (page 6) focuses specifically on energy, but encourage your students to ask more questions like:

- How did you become a professional building engineer?
- What is your favorite part of the job?
- How has your job changed through the years?

Let the Sun Shine In!

Many Chicago Public Schools are housed in older buildings. This has its advantages, namely big windows! Try teaching with some or all of the lights off. You might find that students enjoy the change, and that there is plenty of light to learn.

In winter, using the sun to light your room has the added advantage of providing extra heat. This means boilers can be run at a lower temperatures which translates to (you guessed it) energy savings.

Desk Lamps: A Simple Solution

Before school, after school, and throughout the school day, there are times when the teacher is the only person in the classroom. These are perfect times to use a desk lamp instead of using the overhead lights.

Think about it: If each overhead light bulb is 32 watts and there are 20 in a classroom, one person could use 640 watts, just to light their desk! Compare that to one desk lamp with a 22 watt compact fluorescent bulb, and you see how smart lighting can make a big difference.
Delamping Demystified
Why light areas that don’t really need it? Why not remove a bulb to quickly cut energy use in that area? This is the idea behind “delamping.” Some people might be uncomfortable with removing light bulbs, so here are a few pointers.

First, some general rules:
- Do not compromise health, safety, and security
- Do not delamp fixtures under warranty
- Maintain acceptable light levels and consider people’s needs
- With T8 systems (fixtures with smaller lamps), do not remove more than one lamp

Here are some areas you might want to consider delamping:
- Along windows or skylights
- Around doors and corners
- Over computers, televisions, and equipment
- Over play areas

Each classroom will have different needs, so it is important for teachers and building engineers to work together deciding where to delamp. An engineer in another district taped some cut cardboard to the end of a broom handle, and used it to show teachers how much light would be disappearing if a certain fixture is delamped. Now that’s using your brain!

Smart Energy Planning
When do people arrive in the morning? What time do the exterior lights go out? Is there any time in the day when you should turn off the gym lights? How about the cafeteria?

Building schedules change with the days of the week, seasons of the year, and many other reasons. Schools should think about how schedule changes affect energy use, and making adjustments to save energy. Use the “Smart Energy Planning” worksheet (pages 7-9) to help you make smart energy decisions.

Step 5: Make It Happen!
Fill out, scan, and email page 10 to energy@cps.k12.il.us or fax it to 773.553.3110 Attn: Energy Teams

Energy Action Plan Update
For questions write energy@cps.k12.il.us or call Steve Clark at 773.553.3161.
# Classroom Energy Survey

Teacher: ___________________________  Room: _______  Date: _______

## Lighting:

<table>
<thead>
<tr>
<th>Light Switch</th>
<th>Number of Bulbs on Switch</th>
<th>Wattage of Each Bulb</th>
<th>Watts per Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>x</td>
<td>=</td>
<td></td>
</tr>
</tbody>
</table>

**Total Controllable Lighting Watts in this Room**  
*sum of "Watts per Switch"

= ________ watts

## Computers & Appliances

<table>
<thead>
<tr>
<th>Appliance</th>
<th>How many?</th>
<th>Hours of Operation</th>
<th>On or Off at the End-of-day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor (bulky)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor (flat screen)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptop Computer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copy Machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Number of Computers and Appliances in Room**  = _______

*Note: You could figure out the wattage each appliance is using with a "kill-o-watt" meter.*

Contact energy@cps.k12.il.us for more information

## Heating & Cooling

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a controllable thermostat in the room?</td>
<td></td>
</tr>
<tr>
<td>If so, what are the temperature settings?</td>
<td></td>
</tr>
<tr>
<td>Are the heating vents blocked in any way?</td>
<td></td>
</tr>
<tr>
<td>If so, how?</td>
<td></td>
</tr>
<tr>
<td>Is there a window air conditioner in the room?</td>
<td></td>
</tr>
<tr>
<td>If so, who controls its operation?</td>
<td></td>
</tr>
</tbody>
</table>
Interview an Engineer

Invite the building engineer meet with the Energy Team, environmental club or an individual class. Bringing in a resident expert is a great learning opportunity, and students will have questions about their building beyond those listed.

Building Engineer: ___________________________  Years at this school: _____

What type of heating system does the school have? How does it work? ______________

______________________________________________

What type of cooling system does the building have? ______________

How does the cooling system influence energy use? ______________

How do you control the temperature throughout the school? ______________

______________________________________________

What times do you switch the building from “unoccupied” to “occupied” mode?
   Morning start-up time: _______am
   Evening shut-down time: _______pm

How do you shut down the building for nights and weekend? ______________

______________________________________________

How do you prepare the building for the school day? ______________

______________________________________________

Does the school have a Building Automation System? If so, how does it work? ______

______________________________________________

What suggestions do you have to save energy in this building? ______________

______________________________________________

______________________________________________
**Temperature**

What are your building temperature settings?

(1° adjustments = roughly 1% savings)

- Heating: ____ °C  
  CPS Policy = 68°
- Cooling: ____ °C  
  CPS Policy = 76°

How will you enforce the temperature set-points while still considering people’s comfort?

*(suggestion: buy an laser thermometer or “temperature gun” and check room temperature before making any heating/cooling adjustments)*

How will comfort complaints be handled?

- ______________
- ______________
- ______________

**Windows**

Windows should never be open when the air-conditioning or heat is on, but certainly should be used on the cool, mild days of spring and fall.

How will you let teachers and staff know when it is okay to open their windows?

- ______________
- ______________
- ______________

*(Note: Basic physics tells us that for all the air that leaves through open windows, new outside air will come in. It also works in reverse, air that comes in through open windows pushes out air we already paid to heat. Either way, open windows can be real energy hogs.)*

**Thermostat Control**

Some classrooms have individual thermostats.

How will you make sure individual classrooms keep their thermostats at the correct settings?

- ______________
- ______________
- ______________

How will these classrooms adjust for “unoccupied” temperature settings?

- ______________
Common Areas
Each teacher can be responsible for energy use in his or her classroom, but who is responsible for the common areas? Take some time to assign who will watch the **lights**, **windows**, **computers & electronics**, and **temperature settings** for these areas:

- Cafeteria: ____________________________________________ Name and position
- Gymnasium: __________________________________________
- Locker Rooms: _________________________________________
- Auditorium: __________________________________________
- Stage: ________________________________________________
- Storage Areas: _________________________________________
- Meeting rooms: _________________________________________
- Restrooms: ____________________________________________
- Hallways: _____________________________________________

Computers & Electronics
Computer monitors should always be shut off when not in use. Computers, copy machines, printers, and other electronics should be turned off at the end of each day.

Who will turn off the computer(s) in each classroom? ____________________________________________ Position

Who will **for** shut down computers in the library and/or computer lab? __________________________ Name and/or position

Who will shut down the copy machine each day? _________________________________________________ Name and location of copy Machine

Name and location of copy Machine

Name and location of copy Machine

Name and location of copy Machine
Lighting
What time will exterior lights be turned on? 
(Note: This time changes as sunset changes)

Fall    ____ : ____ pm
Winter  ____ : ____ pm
Spring  ____ : ____ pm

What time will exterior lighting be turned off? ____________________
(Note: When it comes to lighting, safety and crime prevention should always be considered. A National Crime Prevention Council study showed that robbery was not influenced by whether exterior lights were on or off, and that dark campuses actually deterred vandals. Sometime between 10pm and midnight is widely thought to be a good time to shut off exterior lights)

Which (if any) interior lights will be left on overnight? ________________________________

What time will hallway lights be turned on in the morning? ____ : ____ am

How will you motivate teachers to turn off lights in their classrooms? ________________________________

Monitoring & Recognition
Will you be forming student-led Power Patrols?  Yes / No

If so, who will organize and schedule the Energy Patrols? ________________________________

Name and/or position

How will you let students and staff know your energy saving progress? ________________________________

What other monitoring and recognition ideas do you have? ________________________________

__________________________________________________________________________
Energy Action Plan Update

List what specific actions your school has taken to save energy.
Scan and email this page to energy@cps.k12.il.us

School name: ________________________________

Lighting
☐ ________________________________
☐ ________________________________
☐ ________________________________
☐ ________________________________

Computers & Electronics
☐ ________________________________
☐ ________________________________
☐ ________________________________
☐ ________________________________

Heating & Cooling
☐ ________________________________
☐ ________________________________
☐ ________________________________
☐ ________________________________

_________________________  ___________________________  ___________________________
Principal signature        Engineer signature        School Energy Manager signature