

The Energy Patrol Teacher's Manual

We're talking real money!

Did you know that more money is spent on utility bills than on computers and books combined? The second biggest expenditure for most school districts is energy.

If a teacher forgets to turn out the lights when out of the classroom for two hours each day (for example, at lunch and after school) in an average classroom, it will cost the school district an extra \$50 over the school year. Multiply that by the number of classrooms in your district, and you can see that thousands of dollars can be saved each year.

Our dynamic Energy Patrol program will help to cut energy use and save money for the schools involved. Just as important as saving energy, our program offers the opportunity for students to practice using leadership skills and being responsible citizens.



Program Overview

The Energy Patrol involves teams of 10 – 20 students who check the school buildings for energy waste, mainly the inefficient use of lighting. TEP provides the needed materials, and Patrol members are issued clip boards, badges (with a lanyard and badge holder), record forms and door hangers. The patrols are scheduled when classrooms, office areas, portables, etc. are likely to be empty such as at recess, lunch and after school.

Students can be assigned specific areas to check, and patrols should take less than 10 minutes to complete. When lights are found on unnecessarily, they are quickly turned off. Periodically, thermostats are also checked to see that they stay at an energy saving 70 in the winter and 78 in the summer. All windows and doors will be noticed for efficient solar energy usage and all water leaks will be reported. Door hangers are left as reminders to do better and to provide encouragement or praise.

Patrol Requires Little Teacher Involvement

Teachers are usually the initiators of the Energy Patrol program, realizing that the program can help prepare students for real world situations, offer responsibility and provide leadership opportunities.

Textbooks and curriculums don't always offer the kind of experiential education that the Energy Patrol can provide. The field of energy conservation is changing so rapidly that even energy professionals are challenged to keep up with new technologies and information. Today's students will face many energy decisions and bill-paying challenges in their lifetimes. This project can help prepare them and their families and friends as well.

Obviously, a teacher or staff member needs to be willing to advise the students on the Energy Patrol. Veteran advisors have found that it works better if there's something special about the group to attract and motivate students. . .but many combinations have worked well: A student council, a scout troop, an entire classroom or students from all grade levels working together. So long as the Patrol members feel they are working toward a common goal, the composition is up to the advisor. Energy Patrol members should ALWAYS wear Energy Patrol badges while they are on duty.

Teachers are asked to recommend responsible students who can be trusted and who would need little supervision. Teacher involvement is advisory, other than enthusiastic support of the program, particularly if good judgment is used when selecting Energy Patrol students. Administrative involvement after the initial start-up is minimal, but support by the Principal is crucial.

What TEP Will Provide

The Energy Patrol is a complete program that is ready to apply with little or no effort on the advisor's part, other than supervision. Once the Energy Patrol advisor has signed up for the program, the necessary supplies can be ordered on-line or by e-mailing edu@tep.com or faxing an order sheet to 884-3606.

TEP will provide

- clipboards,
- identifying Energy Patrol visors,
- checklists, charts, agreements, certificates,
- door hangers,
- light switch reminders, and
- energy-saving tips.



In addition, T-shirts are also available (if requested) once the team is formed and providing a reliable service to the school, as are certificates for use as awards for successful accomplishments, exemplary classrooms, hard work, etc.

A Simple Daily Routine Saves \$\$

Energy Patrol procedures will differ with each school, its size and configuration, and the specific makeup of the group itself. The following process has worked for some and serves as an example:

Four different students are on duty each day. One team of two students checks half the rooms and the second team checks the other half. After a short while, it should only take about 5-10 minutes. The members go to the designated area where Energy Patrol materials are kept to collect their name badges, clipboards and reminders and then do their rounds. They keep records of what classroom lights are on or off, put up reminder notices or door hangers, note any water leaks, and bring back their materials before going back to their school schedules. It's easy and quick!

Student Creativity Can Add To The Savings

In addition to the basic Energy Patrol procedures, student initiative and inspiration are welcome and can be very effective. Here are some ideas from successful Energy Patrol programs:

- Create bulletin boards or posters on energy conservation,
- Put "Turn It Off" signs on every light switch (TEP will provide these on request),
- Distribute Energy Savings Tips brochures (provided by TEP in English or Spanish) to teachers and students to take home,

- Research energy conservation and publish info in the school paper,
- Encourage teachers to assign reports on energy-related topics,
- Create a skit to teach about energy conservation to perform for classes,
- Work with the facility manager to study the air flow in your school,
- Write notes to teachers to help them do better or to congratulate their behavior, and
- Conduct energy audits with TEP's online Energy Advisor.

The Program may also change over time. Even after only one month of operating an Energy Patrol, it's common to find that lights are almost never left on. If this happens, patrols can change their schedules so that surprise "spot checks" are made once or twice a week or month. Patrols can also invent new areas to check to see that shades are opened and closed at the proper times or checking thermostat settings to see that they stay at an energy saving 68 in the winter and 78 in the summer, according to the Department of Energy.

Students Can Make a Difference

Awards can be presented at regularly scheduled school assemblies to classes that have done a good job of conserving energy. The Energy Patrol checklist will make this easy to judge. However, the basic activity of getting lights turned off at recess, lunch and after school and encouraging other students and teachers to SAVE ENERGY is still their job and all that is necessary for success. TEP will provide certificates for use by the Energy Patrol if requested.



Best Practices

Can one school save \$100 a month? That and more! Here are some ways that Energy Patrol students have made a difference! *

- Energy Patrols in the six elementary schools in Tucson's Flowing Wells School District saved \$27,000 on their district's electric bills during one recent school year.
- DeVargas School in the Cupertino Unified School District near San Jose, California (where the Energy Patrol program originated) found success by getting the kids actively involved. Teachers there claim that their program makes the school a more exciting learning environment, and at the same time reduces the school's energy costs by 1/3 or \$1,000 a month.
- Fort Lowell Elementary School piloted the first Energy Patrol in Tucson, Arizona, and saved over \$2000 in 1991. As part of the Resources Efficiency Awareness Program (REAP), other schools in the Tucson Unified School District have since started more than 25 Energy Patrols, helped save \$3.5 million, and earned \$386,000 in dividends for their schools.
- The Little Rock School District instituted Energy Patrols in all of its elementary schools and by monitoring the use of lighting, air conditioning, heating and other energy systems on a daily basis, they helped their school district save over \$700,000 annually.
- A computer left on 24 hours a day in Clark County, Nevada wastes \$224 a year in electricity. By shutting off their 60,000 computers at the end of the day, students in the Clark County School District had saved more than \$1 million dollars by the end of 2002.

- Ask your custodian what type of light bulbs are used in corridors, classrooms and EXIT signs. Florida's Broward School District is saving \$100,000 a year by replacing 40-watt lights bulbs with three-way LED bulbs in its exit signs.
- Ask your Principal to see about adding an "energy monitor" to school vending machines. A simple device (that soda manufacturers often pay for) can reduce energy costs on school vending machines by up to 50 percent. By installing 20 devices in six schools, Moscow School District in Idaho was able to save close to \$20,000 a year.

** Specific amounts of money saved depend on the electricity or gas rates in that community.*

What Results Can You Expect?

- Energy Patrol students enjoy the role reversal of the program, and can hone their leadership skills.
- Your school can reduce utility costs. . .and depending on your district, some of that savings may be returned to your school.
- The entire student body will become more aware of energy use, as will entire families, when this information is taken home.
- Today's Energy Patrol members are tomorrow's leaders – Energy Council members, teachers, and consumers. . .and perhaps even elected officials who will set policy for our future.

The Energy Patrol Start-up Procedures

Activity	Responsibility
1. Obtain support from your School District Office	Principal
2. Present Energy Patrol program at a staff/faculty meeting a) Describe overview of Patrol activities 1. Policy for entering classrooms unsupervised 2. Record keeping procedures 3. Benefits to the School b) Generate staff support & enthusiasm	Principal Energy Patrol Advisor
3. Develop list of responsible potential Patrol members (entire class or existing group, i.e.: club or student council, students from various grade levels, etc.)	EP Advisor/Teachers
4. Evaluate list and make final choices	EP Advisor
5. Meet with students to explain the general procedures for Energy Patrol and set specific policies for your school	EP Advisor
6. Explain procedures and materials Rules, regulations and agreements a) Check lists for each room b) Location of supplies c) Schedule of inspections	EP Advisor/Students
7. Have students sign agreement to serve as Energy Patrol members. Keep agreements on file	EP Advisor/Students
8. Walk through the areas each Energy Patrol member will monitor, noting locations of light switches and thermostats. Introduce each Energy Patrol member to staff/faculty in the assigned area	EP Advisor/Students
9. Publicize starting date and purpose a) Students b) Staff/faculty c) Community (parent organizations, newsletters, etc.)	Principal /Students
10. Go and save energy!	Energy Patrol Students
11. Publicize positive results. Spread the word!	Everyone



Energy Patrol Guidelines

1. Practice mature and responsible behavior at all times.
 - a) Be attentive only to your task
 - b) Be respectful of others, adults and students
 - c) Complete your patrol quietly
2. Be prompt. Pick up supplies, complete rounds, replace supplies and return to class.
3. Follow your assigned routes.
4. Follow Energy Patrol program procedures. Record information on the check list accurately.
5. Failure to follow guidelines will result in dismissal from the Energy Patrol.

Energy Patrol Procedures

1. Get clipboards, identification badges, reminder notices and record sheets. Check for notices about Energy Patrol meetings or other announcements.
2. Inspect your assigned area and record information neatly.
3. Return supplies to their proper area. If you run out of supplies, inform your advisor so that more can be ordered.

REMEMBER

- ➔ Your Energy Patrol assignment is serious business. **DO NOT** bring your friends along.
- ➔ Members must **ALWAYS** wear their Energy Patrol I.D.'s when on duty.
- ➔ Work quickly, quietly and politely, respectful of others at all times. **DO NOT** disrupt any school, office or classroom activities.

The Energy Patrol Agreement

(TEP will provide a sufficient number of Agreements with the proper school name, and without the Teacher's manual line.)

Student's Name: _____

Grade Level: _____ Homeroom Teacher: _____

I agree to assume the responsibilities of the Energy Patrol.

I will follow all Energy Patrol procedures and will do my best job possible.

Student's Signature: _____

Date: _____

The Energy Patrol Classroom Progress Chart

School: _____ Month: _____

Assigned area/Teacher/room #, etc: _____

Place the daily stickers (AM & PM) from your ENERGY PATROL Captain or Representative on either side of the underlined date.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	TOTAL +
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

KEY

- +** KEEP It Up! (Green) – Electricity being saved.
- ✓** KEEP It Off (Yellow) – Electricity being wasted (1st warning).
- ✗** GET WITH the Program (Red) – 2nd consecutive warning.

Energy Conservation Incentive Chart

To calculate accurate energy usage, the Energy Patrol Advisor must obtain copies of the school's monthly energy bills. Comparisons can be made to the prior year. Your Principal can be helpful with this task, or your District's Energy or Facilities Manager.

January – December 200__ Energy Savings

Month	KWH Used	KWH Used	Per Cent Savings or (Loss)	Dollar Savings* or (Loss)
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Totals				

* For a close estimate, calculate savings at \$0.09 per kwh, the average rate paid for electricity at most schools. For the precise rate at your school, check with your facilities manager or Principal to see if your school is Rate 10 or Rate 13. (Rates differ from May-Oct and Nov-Apr.) TEP rate tariffs are found on the TEP website – www.tep.com – under Business, Programs and Services, Pricing Plans. Once you know the rate, you can view the tariff by clicking on Pricing Plans (Tariffs).

NOTE: Savings may vary due to energy consumption other than electricity. Yearly weather differences are not reflected.

Supplies Order Form

School Name _____ District _____

School Address _____ Zip Code _____

Energy Patrol Contact/Advisor _____ Telephone _____

E-mail _____ Total number of students/classes participating in the Energy Patrol _____

Please indicate the quantities needed for each item.

_____ Green Door Hangers – “Keep It Up” (You’re Doing a Great Job)

_____ Yellow Door Hangers – “Keep It Off” (1st Warning – Oops, We Found...)

_____ Red Door Hangers – “Get with the Program” (2nd Warning – We’ve Warned You Twice...)

_____ Plastic Energy Patrol Visors

_____ Energy Patrol Representative Name Badges

_____ Energy Patrol Captain Name Badges

_____ Lanyards to hold Name Badges

_____ Clipboards

_____ The Energy Patrol Student Agreement (“contract”)

_____ Checklist (8-1/2” x 11”)

_____ Classroom Progress Chart (8-1/2” x 11”)

_____ Energy Conservation Incentive Chart

_____ Energy Patrol Switch plate Stickers (for single light switch plates)

_____ Energy Patrol Classroom Progress Wall Chart (no more than one per school)

_____ Round Adhesive Labels: assorted colors Green, Yellow, Red, (1,000 per pack)

_____ Round Adhesive Labels in individual colors: Green _____ Yellow _____ Red _____ (1,000 per pack)

COMMENTS _____

(Once your Energy Patrol is operating and successful, certificates or t-shirts to award for longevity, achievement, etc. are available. To order, please call 520-884-3677 or e-mail edu@tep.com. Do not use this form. Thank you.)

This form can be printed separately. Please submit your order by utilizing one of the following options:

FAX: 520-884-3606

E-MAIL: edu@tep.com

U.S. MAIL: mail to:

TUCSON ELECTRIC POWER COMPANY

ATTN: BETSY BOLDING

PO BOX 711 – UE 102

