SOUTH CAROLINA FAMILY AND COMMUNITY LEADERS
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Leader Training Guide

"Shedding Light on Home Energy Savings"

Objectives:
To recognize different types of electric light bulbs and compare their rates of energy consumption.
To increase awareness of everyday practices that produce energy savings in the home.

Lesson Overview/Introduction:

The easy availability of electricity to light, heat, and cool our homes has become such a constant part of our lives that we often take it for granted. However, the arrival of the monthly utility bill sometimes gives us a reality check. We may even ask, "Did we actually use that much electricity this month?"

This lesson is designed to increase our awareness of where electric energy is consumed in the home and how making simple changes can add up to significant savings.

Lesson:
Choosing the best type of lighting for each area of your home is a good place to start saving money. But, with today's numerous choices, you may find yourself standing before a large display of light bulbs at a local store asking, "What kind of bulb should I buy for my den table lamp?" So let's talk about what the descriptive names of some of those different bulb packages mean.

Incandescent light bulb or incandescent lamp
This is the light bulb we are usually familiar with because it has been used most often in homes in the past. It makes light by heating a metal filament wire to a high temperature until it glows. These light bulbs come in different wattages such as 25, 40, 60 watts, etc., and they have changed little in design over the years. While these are the least expensive bulbs in initial cost, they are the most inefficient light source in terms of energy use.

Lighting Choices to Save You Money
Light your home using the *same amount of light for less money*. Upgrading 15 of the inefficient incandescent light bulbs in your home could save you about $50 per year. New lighting standards take effect in 2012, and money-saving options such as halogen incandescent, CFL, and LED light bulbs are available today.

New Light Bulbs: What's the Difference?
Traditional incandescent bulbs use a lot of energy to produce light.

- 90% of the energy is wasted as heat
- That lost energy *is money we are throwing away*

Newer energy-saving light bulbs provide the choices in colors and light levels you've come to expect. The new lights are also much more efficient — so they save you money.

1. Halogen Incandescents – about 25% energy savings
Halogen light bulbs are incandescent lamps which have a tungsten filament contained within an inert gas. The initial cost of a halogen bulb is greater than that of an incandescent bulb of comparable size, but it usually lasts longer than a standard bulb. The increased cost makes halogen bulbs only slightly more efficient than conventional incandescent light bulbs. Also, halogen lamps get hotter than regular incandescent lamps so they can pose fire and burn hazards.

2. LEDs — about 75% – 80% energy savings
The light emitting diode (LED) uses the same technology as the little indicator light on your cell phone, but designed to light your home. It is one of today's most energy-efficient and rapidly developing technologies. ENERGY STAR-qualified LEDs use only 20% – 25% of the energy and last up to 25 times longer than the traditional incandescent bulbs they replace.

LED bulbs are currently available in many products such as replacements for 40W and 60W traditional incandescents, reflector bulbs often used in recessed fixtures, and small track lights. While LEDs are expected to be more expensive at this early stage, their long life and energy savings cost less to operate. Prices are also expected to come down as more products enter the market.

3. Compact fluorescent lamps (CFLs) – about 75% energy savings
These light bulbs use the same technology as linear fluorescent tubes, but they are designed to take the place of incandescent lamps. They are often spiral shaped and can fit into most existing light fixtures which were formerly used for incandescent bulbs. While they are initially more expensive than incandescent bulbs, they use only about one quarter of the electricity and can last more than 10 times as long as a standard bulb. Some energy experts say that replacing all standard incandescent bulbs with high efficiency compact fluorescent bulbs can reduce your lighting cost by up to 75 percent.

4. Linear fluorescent tubes
This type of lighting uses electricity in a closed tube to excite mercury vapor which then produces visible light. In the past, longer fluorescent light tubes have been used most often in commercial or institutional buildings, but smaller versions can now be found in homes as well. Linear fluorescent tubes work well in areas such as kitchens and bathrooms where good light is needed. The home use tubes come in lengths as short as 2 feet. A fluorescent lamp converts electricity into useful light more efficiently than an incandescent lamp and, therefore, uses less electrical energy.

Note: Both CFLs and fluorescent tubes contain a very small amount of mercury (about 4 milligrams per tube compared to 500 milligrams in a classic fever thermometer). Even with this small amount, the Environmental Protection Agency recommends that used CFLs be returned intact to a home improvement center where they should be deposited in an appropriate recycling bin.

General Energy Saving Tips
Even though we often think of changes our home lighting as the most obvious way to conserve energy, there are many other habits we can practice to save money on our electric bill as well. Check out the energy saving tips on the last page of this lesson.

(Note to Lesson Leader: You may go over these as a group and/or the sheet can be used as a handout.)

Lesson summary:
Being informed about lighting options for your home and using more energy efficient types of lighting can result in significant savings on your electric bill. Additional saving can be realized by practicing simple energy saving habits.

Suggested Materials: The Leader may add interest to the lesson by showing a sample or a picture of each kind of lighting option discussed.

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Sources/References:
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Easy Energy Saving Tips

Kitchen and Laundry Area

- Run your dishwasher only when it is full; use the “no heat” setting for drying cycle; and install the dishwasher away from the refrigerator. Otherwise, the dishwasher’s heat will make the refrigerator work harder.
- Cover pots and pans with tight fitting lids. The trapped steam makes food cook faster.
- Run exhaust fan while cooking to force hot air out of the house. Turn the oven off 10 minutes before cooking time runs out; food will continue to cook in oven.
- When possible, keep the refrigerator door closed. Up to 30% of the cool air escapes every time the door is opened.
- Vacuum refrigerator condenser coils annually and clean refrigerator gaskets regularly.
- Keep your refrigerator and freezer full. Food retains cold better than air does, so a full refrigerator and freezer require less energy to stay cold.
- Set your freezer to 25 degrees; food will stay frozen.
- Use a toaster and cook with a microwave. Both are more efficient than an oven.
- Use hot water only for highly soiled laundry loads. Cold water removes most soil.
- Clean the lint filter of dryer after every laundry load; a clogged filter slows drying.

Throughout the Home

- In the summer, set your thermostat to 78 degrees or higher. Anything lower, and your energy bill increases by up to 5% per degree.
- Keep windows and doors closed while the AC is on; cool your house, not the neighborhood.
- Do “heat” activities like baking during the coolest parts of the day during summer.
- If vacationing in summer, turn your air conditioner off or move the thermostat to a higher setting.
- Replace your air conditioner filters monthly for peak efficiency.
- Run the exhaust fan when bathing in summer to keep the heat out of your house.
- In winter, setting your thermostat to 68 degrees saves considerable energy.
- In winter, try putting on a sweater or sleeping with an extra blanket before raising the thermostat.
- Turn off thermostat in unused rooms; closing doors and vents to those rooms during
- Winter months.
- Keep heat inside home by closing fireplace damper when the fireplace is not in use.
- Install more attic insulation. Upgrading insulation from 3 inches to twelve inches will cut heating cost up to 20% and cooling cost up to 10%.
- When you are away for winter holidays, lower your thermostat to 55 degrees.
- Check your heat pump filters monthly during the winter.
- Set your water heater thermostat to 120 degrees for greater efficiency.
- Turning your TV off when you are not watching it will save you money.
- Many electronic devises like phone charging adapters use electricity when “off”. Unplug them when not in use to save energy.
- Switch to compact fluorescent light bulbs; they use up to 75% less energy than standard bulbs. Turn off lights when not in use.