

KILOWATT OURS CHALLENGE
AFTER-YOU-WATCH *KILOWATT OURS*
ACTIVITY 6

Overview

Filmmaker Jeff Barrie presents a challenge to the viewers at the end of *Kilowatt Ours* to reduce their electricity use by 25% or more in every home, school and business. In this activity students will create and implement a plan to reach that goal in their homes. They can also create and initiate a plan for the school.

Objectives

1. To develop an awareness of energy-using behaviors, and ways to reduce energy use
2. To develop and implement a plan to reduce electricity use in the home by 25%
3. To calculate energy- and dollar-savings after implementing their plan

Skills

Critical Thinking
Observation
Math

Time

Preparation: 1 hour (including viewing of 25-minute *Kilowatt Ours National Edition*)
Procedure: 1 hour

Materials

Kilowatt Ours National Edition DVD (2007)
Electric bill or billing history usage
After-you-watch *Kilowatt Ours* Activity 6 Student Pages (pages 3-6)

Preparation

- Have students complete Before-you-watch *Kilowatt Ours* Activity 1 if they have not already done so.
- Show *Kilowatt Ours: A Plan to Re-Energize America* to your students.
- Ask students to call the customer service number for their electricity provider and request a free billing history usage for their residence. Students will need the account information from their electric bills to make the request. The histories will be mailed to their home addresses within a few days, or can be faxed to the school. Alternatively, students may bring in an electric bill from home. The students will use the average monthly kilowatt-hours used in their home to calculate the 25% reduction.
- If students are unable to bring their billing history usage or electric bill from home, you may provide example bills from your residence, and develop a class plan. Your personal information may be blacked out to protect privacy.

Note: If parents or families are not willing to participate in the activity at home, students can do the challenge at school as an alternative.

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Procedure

1. Ask the students how difficult or easy they think it will be to reduce their electricity use by 25%. How do they think they can do it?
2. Brainstorm a list of easy actions to take at home to save energy, using the Kilowatt Ours “Top Ten Steps to Save \$600” and ideas included in this activity as a guide.
3. Each student calculates 25% of their household’s electricity use for one month based on their average kilowatt-hour use, according to their history usage or monthly bill.
25% Reduction Goal = average kWh used in one month × 0.25
4. Each student meets with their family members and chooses at least 5 actions from the list based on what they and their families think they can realistically do. They write these actions on their Action Pledge, which is their plan.
5. After each chosen action, they specify when the action will be carried out. For example, they may begin the action immediately, in two weeks, or in one month.
6. Students and their families sign their pledges, committing to carry out the actions to reach the 25 % goal.
7. Over a period of one month, students and their families begin to implement their energy-saving action plans, according to the pledges they signed.
8. After one month, students will review the next electric bill they receive at home and compare it to the previous month’s bill to determine how many kilowatt-hours they saved and if they reached their goal.
9. If they did not reach their goal of a 25% reduction, they can review and adjust their plan and try again the following month. A meeting with the members of the household to review the plan and make necessary changes may help.
10. Each student will report their actions and results to the Kilowatt Ours energy-savings calculator called the “Kilowatt Counter” (www.CountYourKilowatts.org). Their savings are calculated in dollars, kilowatt-hours, pounds of coal, and carbon dioxide, sulfur dioxide, and nitrogen oxide reductions. Cumulative savings will be reported to students each month in automated emails, and they may also sign up to receive monthly energy-saving tips to continue saving more energy.
11. Students may also keep a weekly journal to write about their observations, experiences, and ideas, while their household is working towards their goal. Reading the electric meter for the household each week could also help them see a reduction in consumption on a weekly basis (see Your Electric Meter activity).

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KILOWATT OURS CHALLENGE AFTER-YOU-WATCH *KILOWATT OURS* ACTIVITY 6

Name _____ Date _____

**CIRCLE THE NUMBER NEXT TO THE THINGS THAT YOU ALREADY DO AT HOME.
PICK 5 NEW ACTIONS TO TAKE AT HOME WITH YOUR FAMILY TO SAVE ENERGY!**

Easy Energy-Saving Actions

No-Cost

1. In the summer, keep your thermostat set at 78° F or higher in the daytime, and 85° F when no one is in the room.
2. In the winter, keep the thermostat set at 68° F or lower in the daytime, and lower it to 60° F when no one is in the room, and at night.
3. Stuff rags, a towel or a rug in the crack under outside doors.
4. Wear a sweater or warm cap to stay warm instead of turning up the heat.
5. In the summer, spend more time in the cool parts of your home, like the lower floor, and in the winter, spend more time in the warmer areas, like upstairs.
6. When you are heating or cooling, keep windows closed and close outside doors quickly.
7. Close the curtains in rooms you are cooling during the summer, and open the curtains to let in sun and heat during the winter.
8. Reverse the direction of ceiling fans during the winter to pull heat down from the ceiling.
9. Close heating-and-cooling vents in empty rooms.
10. Regularly clean or change the filters on the air conditioner and furnace.
11. Close the damper in the fireplace when it is not in use.
12. Turn off unnecessary gas pilot lights during the summer.
13. Turn off lights when no one is in the room, and turn off appliances when not in use.
14. Use power strips that can be switched off.
15. Put your computer in hibernation or standby mode, or turn it off when you are not using it.
16. Limit your use of luxury appliances, such as electric hand lotion warmers.
17. Keep your refrigerator full so that it operates more efficiently. You can put empty containers and bottles in it if necessary.
18. Adjust your hot water heater to a water temperature that is comfortable and not too hot (120° F – 125° F is a good range).
19. Hang your clothes outside to dry when possible rather than using the clothes dryer.
20. If you use your clothes dryer, dry full loads and clean the filter after every load.
21. Wash your clothes in cold or warm water rather than hot water, and only wash full loads.
22. Run your dishwasher only when it is full, and hand wash dishes more often.
23. Cook more than one item in the oven at once, and keep the oven door closed.
24. When cooking on the stove top, cover pans with lids to keep heat in, and use the smaller burners if possible.

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Name _____ Date _____

Easy Energy-Saving Actions

More No-Cost

25. Take shorter showers more often, instead of baths.
26. When washing your hands and brushing your teeth, turn water off until you are ready to rinse.
27. Fix leaking faucets.
28. Open and close the refrigerator door quickly.
29. Adjust the temperature of your refrigerator to no lower than 37° F.
30. Set your freezer temperature to no lower than 5° F.
31. Use only one refrigerator.
32. Defrost the freezer when the ice is no more than ¼-inch thick.

Low-Cost

1. Use floor and ceiling fans to stay cool instead of lowering the temperature of the thermostat.
2. Seal cracks around doors and windows, and other gaps in the walls and foundation, with caulk and weather stripping.
3. Replace incandescent light bulbs with compact fluorescent bulbs.
4. If possible, replace old appliances with Energy Star rated ones.
5. Install low-flow showerheads and faucet aerators to reduce hot water use.
6. Insulate the hot water tank with an insulation wrap, and insulate the exposed hot water pipes coming out of the tank, with pre-cut insulation.
7. Use mastic (a gooey substance applied with a paintbrush) instead of duct tape to seal all exposed ductwork joints in the attic, basement and crawl spaces.
8. Insulate heating-and-cooling ducts.
9. Install storm windows or sheets of plastic to single-paned windows during the winter to decrease heat loss through the windows.
10. Add insulation and a radiant heat barrier in the attic.
11. Install a programmable thermostat.
12. **Can you think of more energy-saving actions?**

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Name _____ Date _____

Kilowatt Ours Action Pledge

1. Talk with your family and circle the numbers by the things from either the no-cost or the low-cost list that you already do at home. Then pick at least five new actions that you and your family agree to take at home to save energy and money.
2. Write the actions on the Kilowatt Ours Action Pledge page. The pledge is your household's plan to save 25% in energy use.
3. Next to each action write when you and your family will do the actions. For example, you may decide to do them right away, in one or two weeks, or in one month.
4. Ask everyone in your household to sign the pledge.
5. Post the pledge on the refrigerator or another visible place as a reminder for everyone to do the actions. Remember that your goal is to reduce your household's energy use by 25%. Choose actions that you and your family can all do and that will help you reach your goal!
6. Look at your last electric bill or history usage from your local utility to find out how many kilowatt-hours your family uses in one month. Use the equation below to calculate your 25% reduction goal.

$$\mathbf{25\% \text{ Reduction Goal} = \text{average kWh used in one month} \times 0.25}$$

6. Finally, report your energy-saving actions and savings to the Kilowatt Counter. Just go to: www.CountYourKilowatts.org.

Ultimate Kilowatt Ours Challenge: Become a Net-Zero Home!

Those students and families who are super-motivated and are already meeting the Kilowatt Ours 25% reduction goal can try the Ultimate Challenge! The challenge is to reduce energy consumption as much as possible in the home. Then, with the resulting dollars saved, buy blocks of green power through your local electricity distributor. Aim to have all of your household's electricity consumption originating from green power sources, and you and your family can work towards the goal of becoming a **Net-Zero Home!**

How would you build a net-zero-energy community?

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KILOWATT OURS ACTION PLEDGE

Name _____ Date _____

We understand that consuming energy in buildings impacts finances, human health, the environment, and our community. Therefore, we pledge to take the following steps in an effort to reduce our energy consumption at home:

Our goal is to save _____ kilowatt-hours by _____, _____.
Number Date Year

We will:

1.

When:

2.

When:

3.

When:

4.

When:

5.

When:

Family Member's Name (print) Signature Date

1) _____

2) _____

3) _____

4) _____

5) _____