

DO YOUR PART



A guide to help
you understand
and improve
your home's
energy use.





Be

**ENERGY
SMART**

Weatherization Partnership

Weatherization is a PARTNERSHIP between the **WEATHERIZATION PROGRAM** and **YOU**.

As with any partnership, each partner has responsibilities. The Weatherization program will address the heating system and mechanical equipment and reduce energy loss through the outside of the house called the shell. These responsibilities will be identified as **“OUR PART”** and by this symbol. 

You will be responsible for maintaining the materials installed in your home and following energy saving practices. These responsibilities will be identified as **“YOUR PART”** and by this symbol. 



In general, the Weatherization program responsibilities include:

- Performing an initial inspection;
- Installing appropriate materials in a safe and timely manner, with the highest quality of work; and
- Performing a final inspection.

In general, your responsibilities include:

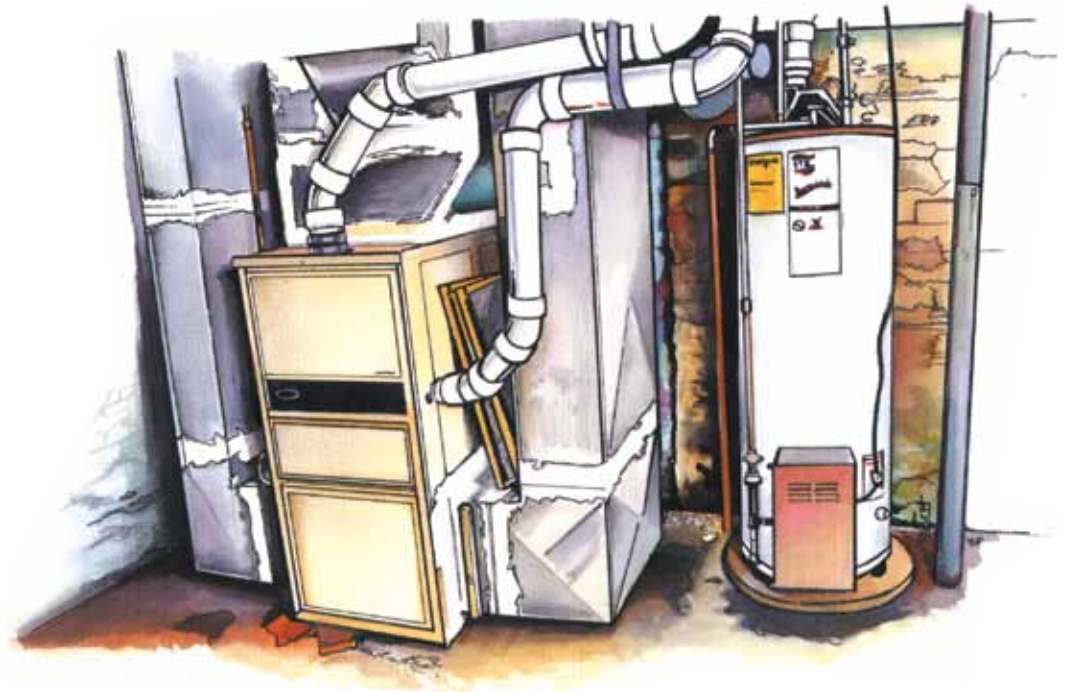
- Being at home during the initial and final inspections to answer questions about your house;
- Allowing the Weatherization program staff access to the entire house;
- Caring for and protecting the weatherization materials installed;
- Caring for and protecting the mechanical systems, which include exhaust fans, hot water heater, cook stove and heating units; and
- Carrying out the recommended energy efficiency lifestyle tips, whenever possible.

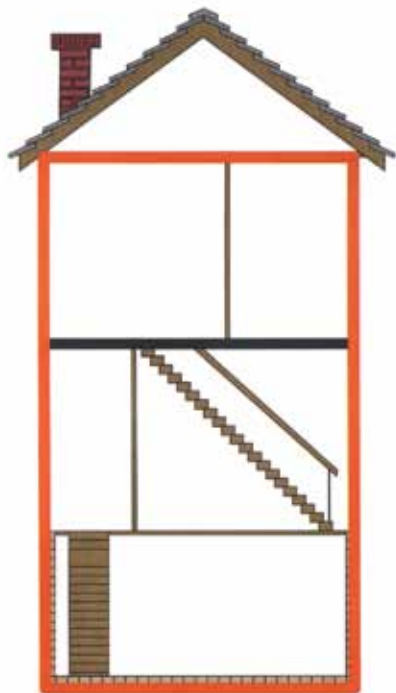


Introduction

The Weatherization staff are trained professionals who know how to inspect and weatherize your home. They take the whole building into consideration. The Weatherization program divides your home into three parts: the mechanical systems, the outside of the house (shell), and the people and pets who live in the home. If one part of the house is changed, it can affect how the other parts operate. This all has an effect on the health, safety, durability, and energy use of your home.

The mechanical equipment in your home includes the heating system, the hot water heater and any fans used to provide ventilation in the house. The system heats your house and also helps move air and moisture around the house. Understanding how the equipment works is very important.





A second part is the shell. When it is working properly, it keeps the cold out in the winter and the heat out in the summer.

The family and pets occupying the home are the third part of the house system. You can improve the health and safety and energy use of your home by understanding how the

mechanical equipment, shell and people in the house live and work together.



Heating Systems

There are two types of heating systems: central heaters and room heaters. Central heaters deliver heat to the entire house through either a duct system or pipes. Room heaters deliver heat into one area, usually one room. Your heating system (central or room heater) will be inspected and tested prior to any other work being started to ensure that it is operating safely and efficiently. Additional testing may be repeated as the work progresses to ensure that changes to the home have not affected the operation of the heating system.

If the heating system is beyond repair, the Weatherization program may install a new one.

OUR PART

- Perform a heating system safety inspection that will include the inspection of:
 - Heat exchanger
 - Venting
 - Chimney
 - Exhaust equipment
 - Ductwork
 - Safety controls
 - Flue pipe
 - Wiring
 - Fuel lines
 - Thermostat
- The inspector will also check for carbon monoxide production and measure the furnace's combustion efficiency.

YOUR PART

- Set your thermostat to 68°F. You can set it back even lower at night or when you are not at home. You may need a higher setting for health reasons or if you have a new baby or an elderly household member.
- Visually check the chimney for signs of moisture or decay.
- Keep a clear pathway to the furnace or room heater and keep stored items (especially those that could catch fire) away from it.
- Look over your heater from time to time. Make sure the flue pipe is securely attached to the chimney.
- Check the furnace filter monthly and change it if it is dirty. A dirty filter can reduce the efficiency of your unit and reduce its life.
- If you burn wood, check the chimney or flue to make sure there is no creosote. Creosote is the dangerous build-up from the combustion of wood. Have the chimney cleaned by a professional on a regular basis. Clean and inspect the pipe connecting the stove to the flue every two weeks.
- Have a professional heating contractor perform a safety inspection every year. Use the Heating System “OUR PART” list to make sure that your contractor performs a complete service on your furnace.



Distribution Systems

A central heating system heats rooms through ducts or pipes. If the distribution system is undersized or the circulator is working poorly, more heat escapes up the chimney instead of being delivered into your home.

OUR PART

- Test your distribution system to ensure that heat is not escaping from the ducts or pipes.
- Access the furnace's distribution system.
- Test to see if the distribution system is operating properly.

YOUR PART

- Install and use a carbon monoxide detector. Place it near a bedroom.
- Do not remove any materials used to seal the distribution system.
- Do not block or close any heating registers or air supply or return vents. This can affect the operation of the distribution system.



Extra Heat Sources

If you feel cold because of very low outside temperatures and you want to use an additional heat source, you should know some facts before you decide what to use. A heater that burns fuel, whether gas, wood or kerosene, produces moisture and gases; the most dangerous gas is carbon monoxide (CO). Breathing carbon monoxide can cause flu-like symptoms, serious illness and sometimes even death.

YOUR PART

- Do not use your cook-stove to heat your home. Your cook-stove is not designed for heating purposes. If you have a gas stove, it could be dangerous to use it in this manner. The open flame (even in the oven) produces combustion by-products, such as carbon monoxide (CO). These are dangerous to breathe. An electric stove would be very expensive to use as a heater. The unprotected hot surfaces could also burn a person if touched.



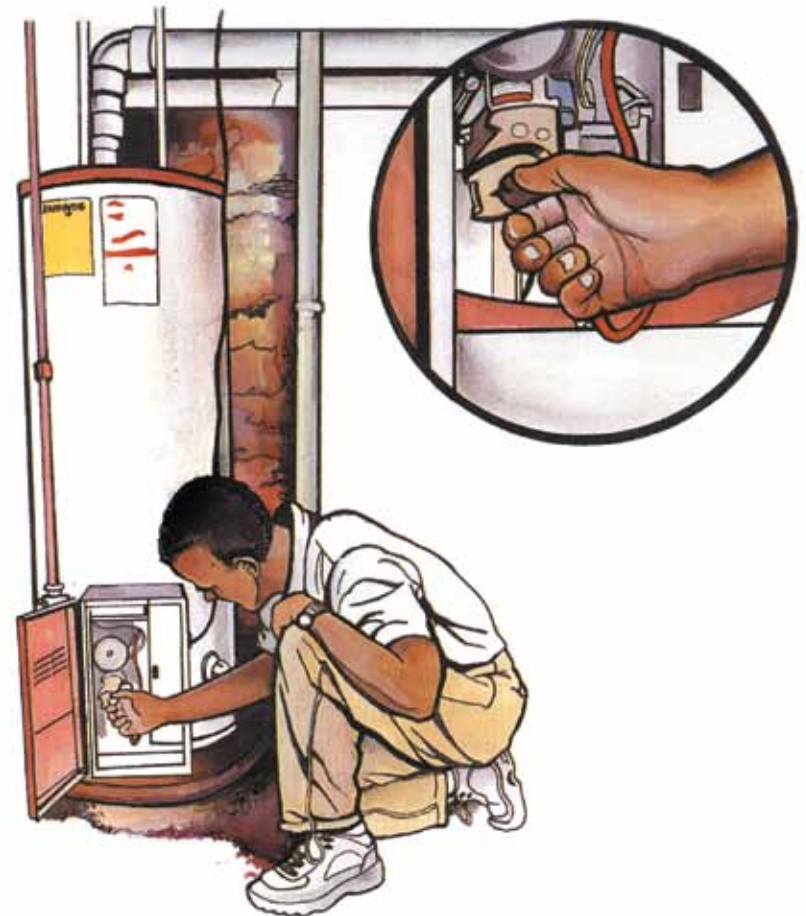
- NEVER use unvented combustion heaters.
- Use electric room heaters ONLY according to the manufacturer's instructions.
- Keep all room heaters (including electric room heaters) away from drapes and furniture that could catch fire.
- Clean and maintain these heaters for proper and safe operation.

Water Heaters

After the heating and cooling equipment, the water heater is the second biggest energy user in your home. Heating water costs the typical family \$200 to over \$500 a year.

OUR PART

- Inspect your water heater for safety and efficiency.
- Insulate the water pipes wherever they are accessible, especially within six feet of the water heater but not closer than three inches to the draft hood.
- Check for any obstruction of airflow at the draft hood and base of the water heater.

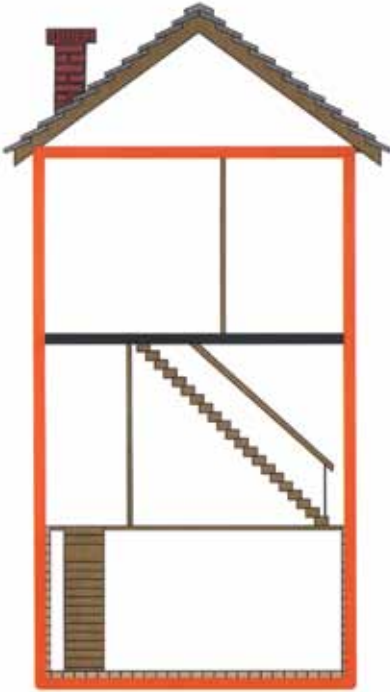


YOUR PART

- Install a low flow showerhead (1.5 gallons per minute) and faucet aerators. They could save you approximately \$22 a year for each person in your household. Look for showerheads listed for 2.2 to 1.5 gallons per minute (gpm).
- Turn your water heater thermostat down to 120 degrees F, unless you have a dishwasher without a preheater. This step will save you money and reduce the possibility of being burned by water that is too hot. Your Weatherization energy auditor will show you how to make this adjustment.
- Take short showers. They use about half as much hot water as a full tub bath.
- Avoid running the water constantly when you wash dishes by hand.
- Repair any dripping faucets, especially if they are hot water.



The “Shell” of the House



The shell of your house consists of the walls, ceilings, floors, windows and doors. The typical house loses the majority of its heat through the openings in the shell. Heat loss through the shell of the house can be reduced through the air sealing and insulation of walls, attics and floors. When these leaks are sealed, you will be more comfortable and your energy use will be reduced.

There are several types of insulation: flexible materials (such as fiberglass batts and blankets), rigid materials (similar to Styrofoam), and loose fill insulation (such as cellulose or fiberglass). Cellulose is ground-up recycled newspaper that has been treated to make it resist fire. The Weatherization program primarily uses cellulose for insulating walls and attics. If you live in a mobile home, the program will use fiberglass.

OUR PART

- Perform measurements, using tools such as a blower door; perform energy cost estimates; and inspect to determine what improvements can be made to reduce energy use and costs.
- Insulate the attic and basement/crawl space.
- Air seal areas of the shell prior to insulating the house.
- Insulate the walls using a technique called “dense pack” for the best results.

YOUR PART

- Be careful not to remove the insulation or walk on it.
- Check to make sure that household members do not stack anything on the attic insulation.
- Check the attic for leaks during rain and cold. Repair the roof if any leaks are found.
- Do not block attic vents.
- Keep the attic hatch to the living area closed and sealed to prevent heat and moisture from entering the attic.



Moisture and Indoor Air Quality

Moisture enters the home in many ways. It comes from water leaking into the home, from cooking and bathing, and through the ground under the home. The actual amount of moisture is determined by the strength of the moisture source, the drying potential of the outside air, and the number of times an hour the inside air is replaced.



It is important to control the amount of moisture present inside your house. Too much moisture can lead to the growth of molds and mildews, asthma and related breathing problems. It can also cause rotting and decay of parts of the building.

OUR PART

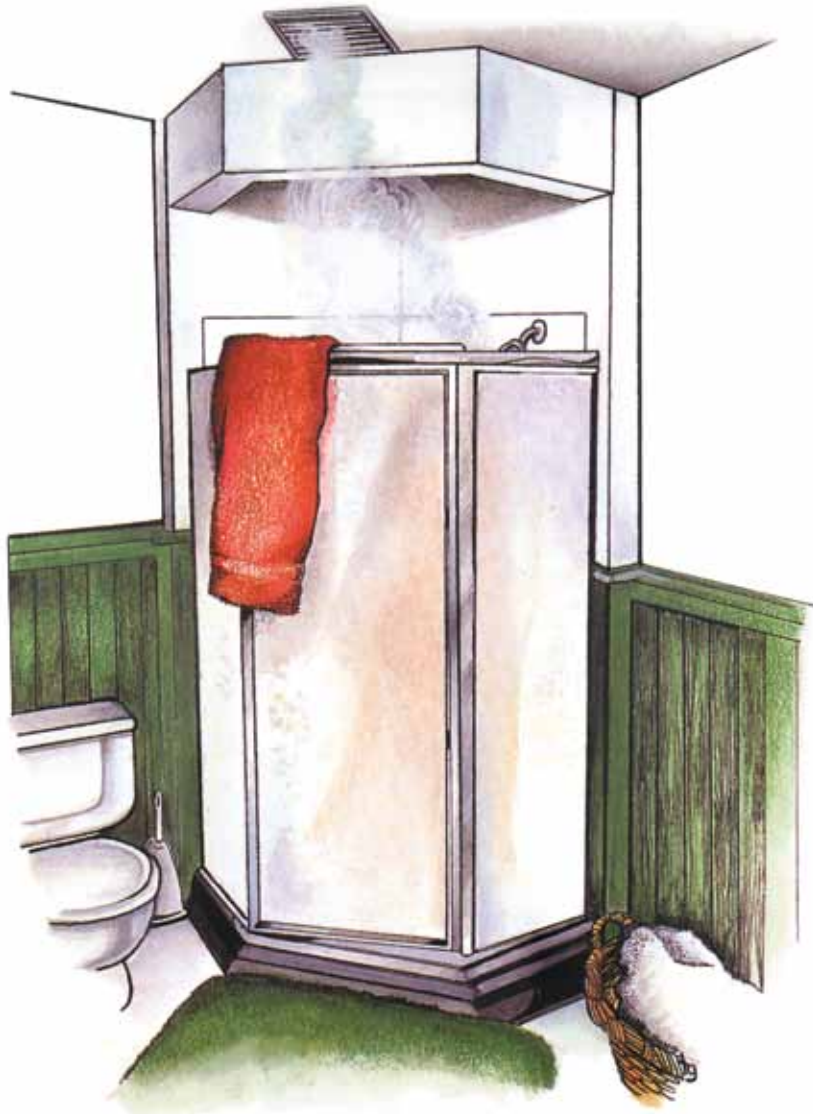
- Cover exposed dirt floors in crawlspaces with polyethylene or heavy plastic, if possible or accessible.
- Properly vent bathroom and kitchen fans if needed, and the clothes dryer to the outside.
- Check for plumbing leaks.
- Check for minor roof leaks.
- If necessary, install additional controlled ventilation. This might be a bathroom fan, for example.

Moisture and Indoor Air Quality

YOUR PART

- Purchase an accurate relative humidity gauge and monitor indoor moisture levels. Try to keep the moisture level less than 25 percent during the heating season. Consider doing the following things:
- Use a dehumidifier, if necessary, to reduce high indoor moisture levels in summertime.
- Cover pots when boiling water or cooking, and use the exhaust fan if you have one.
- Repair plumbing leaks immediately.
- Repair damaged gutters and keep them clean of leaves and debris.
- Use the bathroom fan or slightly open a window when showering.

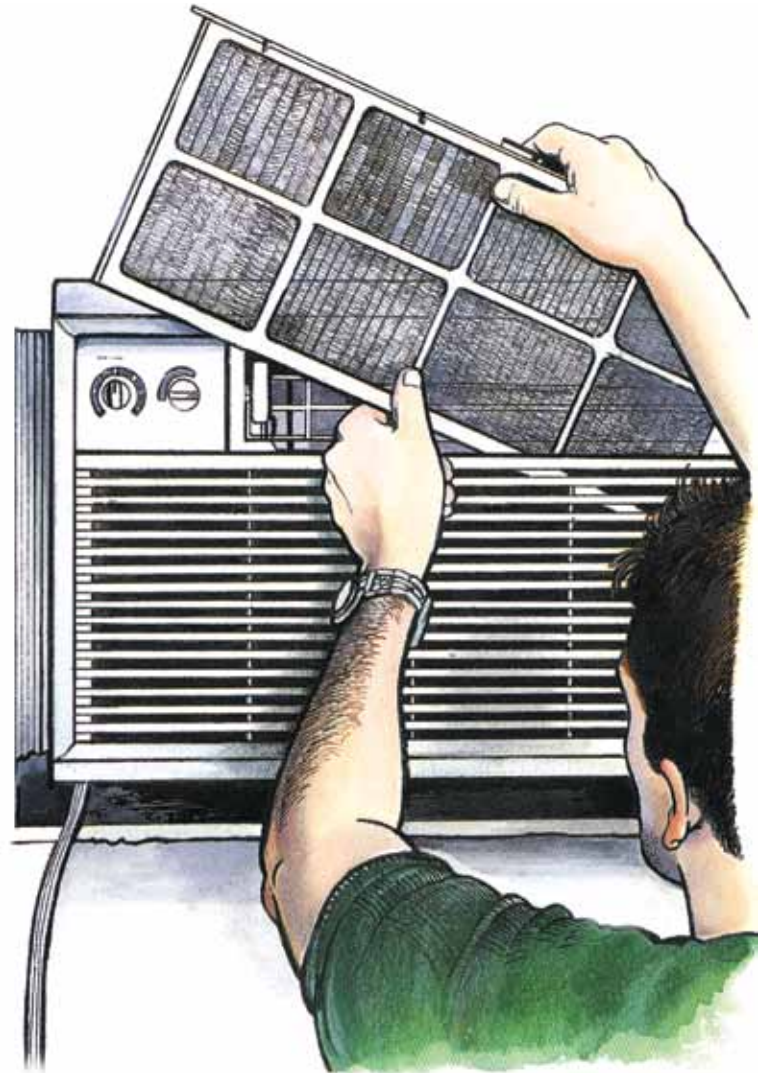




- Try not to hang clothes inside to dry.
- Do NOT disconnect the dryer venting. The moisture and chemicals from laundry cleaners or bleach are harmful to you and your furnace. Keep the dryer vented to the outside.
- Try to not run humidifiers unless the relative humidity in your house is very low. Humidifiers also use a lot of electricity.
- Always keep any newly cut firewood outside to dry.

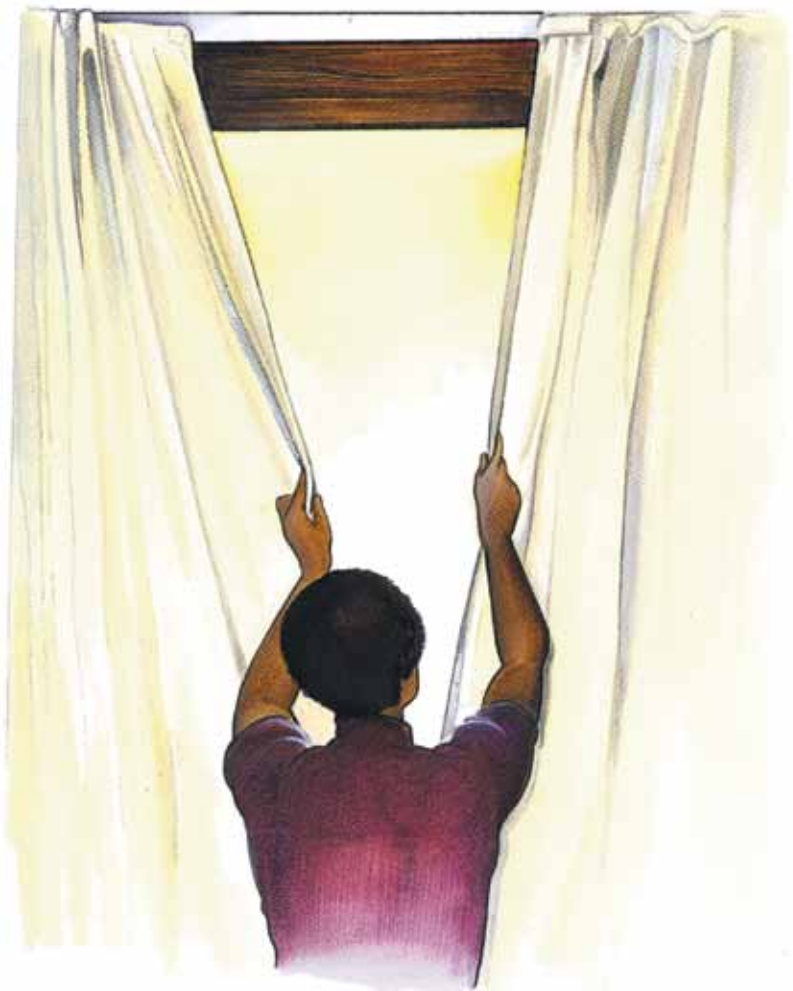
Save Energy and Stay Cool

The weatherization work completed on your home, such as the air sealing and insulation, will also help keep your house cooler during the summer. If you have central air conditioning, the Weatherization program will check to see if it is operating safely and efficiently. There are other things you can do to keep cool and comfortable.



YOUR PART

- If you use room air conditioners, clean the back coils or replace the filters once a month.



- If you have a central air conditioner, change your furnace filter monthly.
- During the day, close your shades and drapes to help block the sun's heat.
- Keep windows closed during the hottest hours of the day. During early morning hours and at night, open windows opposite one another for cross ventilation.
- When possible, do your cooking and use any heat-generating appliances in the early morning and evening hours when it is cooler.
- After bathing and cooking, use bath and kitchen exhaust fans to remove heat and moisture. You will feel more comfortable with less humidity.

Appliances

The Weatherization program does not replace or do repairs to appliances. Helping your appliances run well and making them last longer will save you money. Here are some things to consider.

REFRIGERATOR

The refrigerator uses 20 percent of the average home's electricity. Take a few minutes to make sure your refrigerator is operating properly. Side-by-side refrigerators use more electricity than regular models.

YOUR PART

- Check to see if the temperature is set correctly: 38°F to 40°F for the refrigerator compartment, and 0°F to 5°F for the freezer. Check the temperature in both compartments with a thermometer to make sure they are not running too cold and wasting energy.
- Clean the dust off the condenser coils at the back or bottom of your refrigerator. Dirty coils make the compressor motor run more and use more electricity.
- Make sure the refrigerator fan is clean.

- To prevent air leaks, the strip around the refrigerator door must have a tight seal. Keep the strip clean and in good repair. If it is not, contact a local repair service, the manufacturer, or a hardware store to get a new one.
- Tightly pack items in the freezer. Add bags of ice to fill empty space. If your freezer is a manual defrost model, make sure to defrost on a regular basis. The thicker the frost, the harder the refrigerator must work.
- Use the “Energy Saver” switch if your refrigerator has one.



Appliances

COOK STOVE

Your stove is not a huge energy user, but there are a few things you can do that will save some money. There are also some very important safety issues of which you should be aware.

OUR PART

- Test your gas-fired cook-stove to ensure it is operating properly
- Explain any necessary adjustments or needed repairs.



YOUR PART

- Clean your cook-stove on a regular basis to prevent the burners from producing carbon monoxide. If you have a gas oven, do not cover the bottom of your oven with aluminum foil as this may cause the oven to produce carbon monoxide.
- Turn on the oven's self-cleaning cycle just after baking, while the oven is still hot. Make sure there is ventilation during the self-cleaning cycle.
- Use a pressure cooker. It saves energy by cutting cooking time by approximately two-thirds.
- Use a microwave. It uses less than half the energy of a conventional oven.



Appliances

CLOTHES WASHER AND DRYER

Approximately 90 percent of the cost of washing clothes can be attributed to heating water.

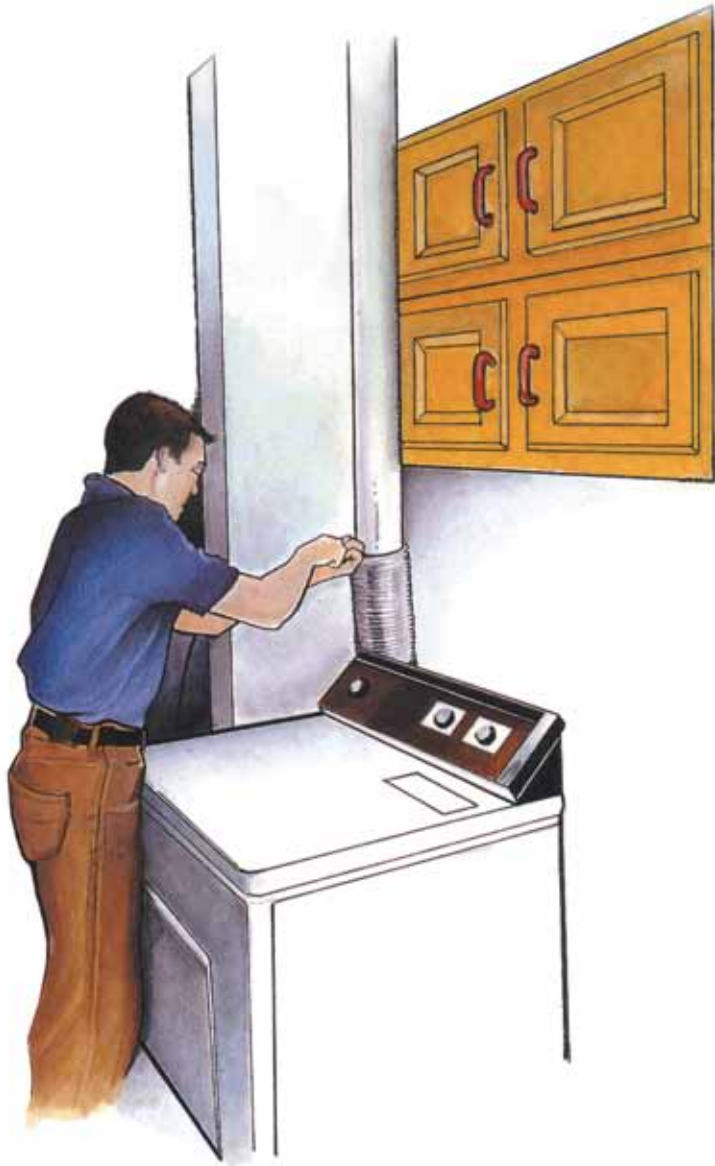
OUR PART

- Vent the clothes dryer to the outside to reduce indoor moisture and chemicals.



YOUR PART

- Wash your clothes in cold water instead of warm or hot. By using a cold-water detergent, your clothes will be as clean as if you had washed them in warm water. Using cold water also extends the life of your clothes. And, it saves money on your gas and electric bills by not heating unnecessary water.
- Use a cold rinse cycle. It does not affect the cleaning results.
- Avoid using more detergent than necessary. Too much detergent may require extra rinsing.



- Wash full loads, but be careful not to overload!
- Remove the lint from the dryer trap each time you do a load of clothes. Lint slows down air circulation and increases drying time.
- Clean out your dryer vent occasionally to avoid fires and use less energy.
- Do not use venting bypass attachments to recover heat from the dryer vent hose. They put chemicals and excess moisture into your home.
- Do not disconnect your dryer vent.

Appliances & Information

PURCHASING NEW APPLIANCES

When you purchase new appliances, look for the ENERGY STAR® Label. ENERGY STAR appliances have been qualified by the U.S. Department of Energy and the U.S. Environmental Protection Agency as highly energy efficient products. If you buy a used appliance, it may seem cheaper, but they are much more expensive to operate and will increase your electric bill.

For more information, contact the U.S. Environmental Protection Agency at: 1-888-STAR-YES (1-888-782-7937).

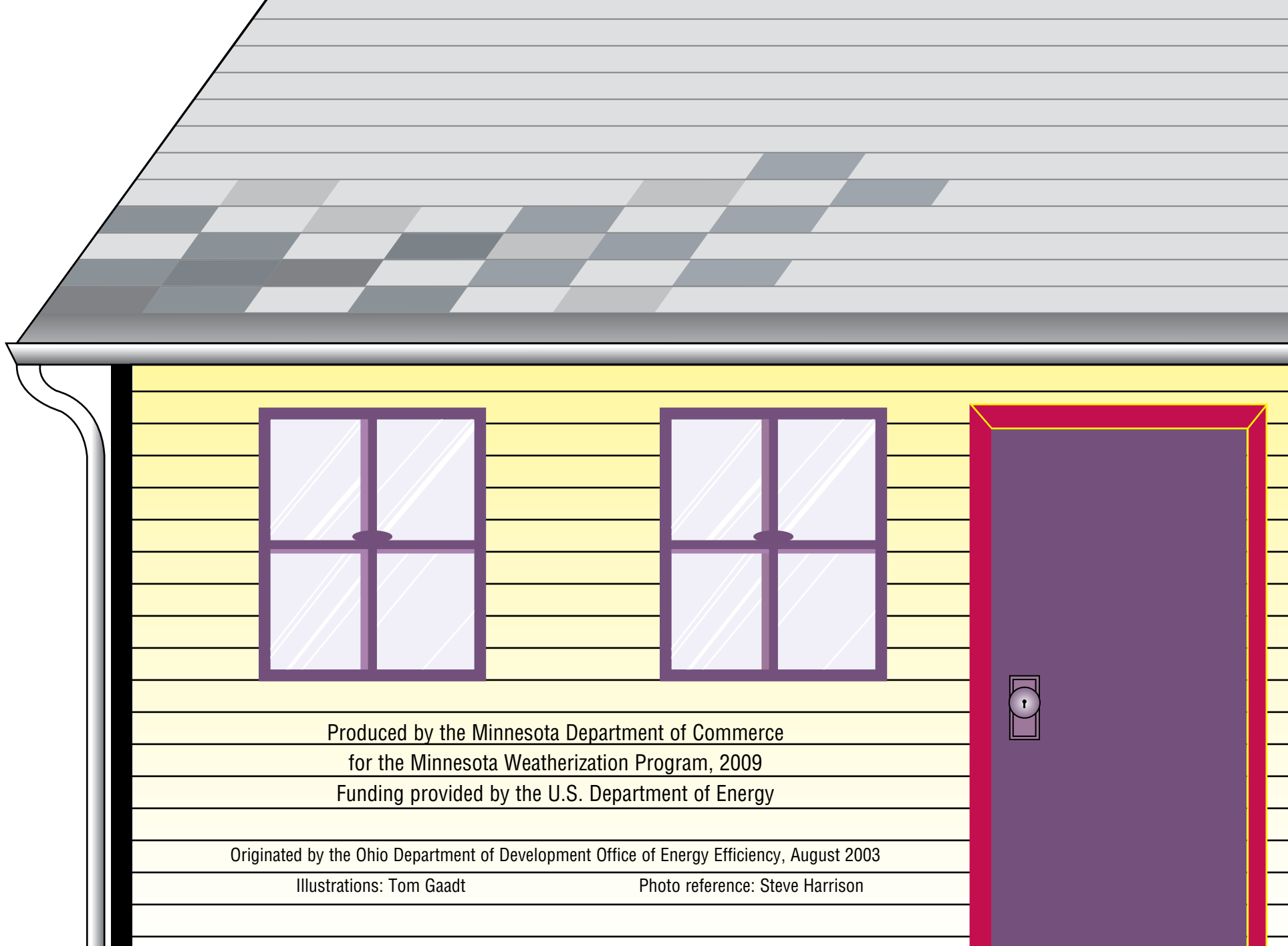
If you have access to the Internet, visit the ENERGY STAR Web site at: www.energystar.gov. For additional information about energy conservation, contact the Minnesota Department of Commerce Office of Energy Security by phone at 651-296-5175, or on the web at www.energy.mn.gov. You will find links to our Home Energy Guides, descriptions about ENERGY STAR products, and information about renewable energy.

Now That Your Home Has Been Weatherized

After the weatherization work is complete you should notice some changes. Your energy consumption should be less and, depending upon the heating season and fuel costs, this should mean lower utility bills. If you take care of the materials installed and follow the energy saving practices, you should enjoy a more comfortable, safe and energy efficient home.

If you have any questions about the work done on your home, please contact:





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