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Iowa Energy Savings Guide

Saving Energy Saves You Money

Funded by the:
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U.S. Department of Health and Human Services

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Iowa Weatherization Assistance Program
Iowa Community Action Agencies

In cooperation with
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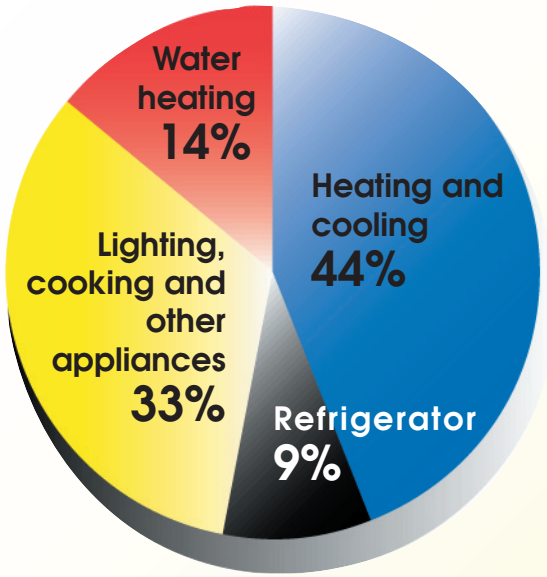
Saving energy saves you money

This guide describes things you can do around your home to reduce your utility bills and save you money. It offers some easy, practical steps that you can take to save energy and reduce the cost of heating and cooling your home. There are also tips on ways to reduce your electric and water usage. In addition, energy related health and safety information is also included. So, take a few minutes to read this guide and save it so you can refer to it in the future.

How energy is used in homes



Start saving money now with these easy tips

- Lower the thermostat 2 degrees or more in the winter.
- Change your furnace filter monthly during the heating season. If you have central air conditioning change the filter in the summer, too.
- Keep obstructions away from the hot and cold air registers.
- Lower the water heater temperature.
- Replace light bulbs with high efficient fluorescent light bulbs.
- Unplug secondary refrigerators and / or freezers not fully used.
- Wash and dry full loads of laundry. Hang clothes out to dry when possible.
- Clean dryer lint filter after each load.
- Turn lights off when leaving a room.

Read on for more great tips...

HEATING AND COOLING

Heating and cooling your home makes up the largest portion of your energy bill. Following are some steps you can take to help you save energy and money when you heat and cool your home.

During the heating season do the following:

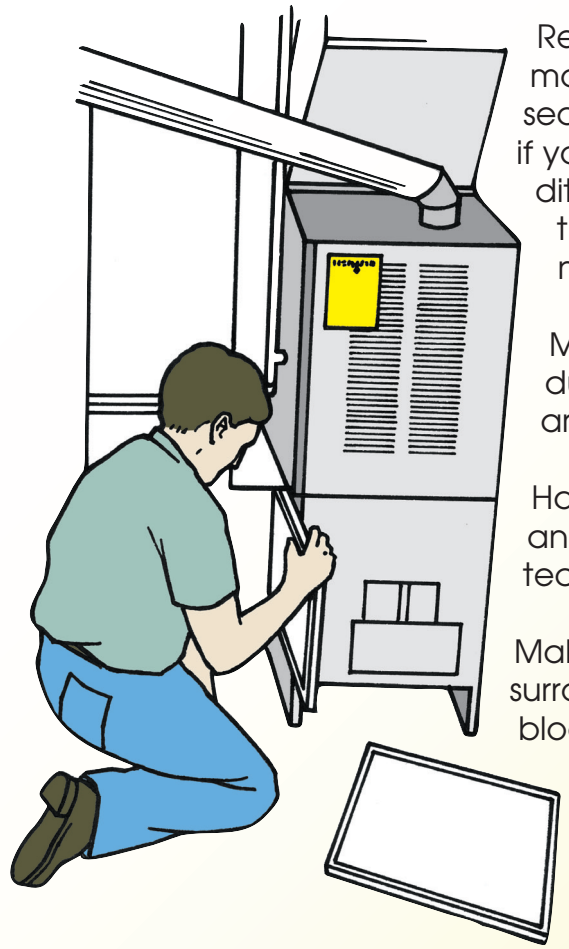
Set your thermostat at 68 degrees or lower. You can set it back even lower at night or when you are gone for more than 2 hours.

- Turning the thermostat higher will not heat up your home quicker.

- If you have a baby or elderly person in your home, you may need to keep the thermostat set higher than 68 degrees for health reasons.

Percentage of heating bill saved by turning down your thermostat

No. of degrees thermostat is turned down	Thermostat turned down for 8 hours/day	Thermostat turned down for 24 hours/day
2º F	2%	8%
4º F	6%	12%
6º F	4%	18%
8º F	8%	24%



Replace the furnace filter monthly during the heating season. Check it year round if you have a central air conditioner. A dirty filter reduces the efficiency of the furnace.

Make sure the furnace ductwork is intact and there are no holes.

Have your furnace checked and cleaned by a furnace technician yearly.

Make sure the furnace is not surrounded by items that block the flow of air to the furnace.

Clean air registers, baseboard heaters, and radiators as needed. Make sure they are not blocked by furniture, carpeting, drapes, or other items.

Run ceiling and room fans, this will move the air more effectively through your home.

Let the sun warm your home. On sunny days, open the shades and curtains to allow sunlight to warm the inside of your home. Keep shades and curtains closed at night to help keep warm air in your home.

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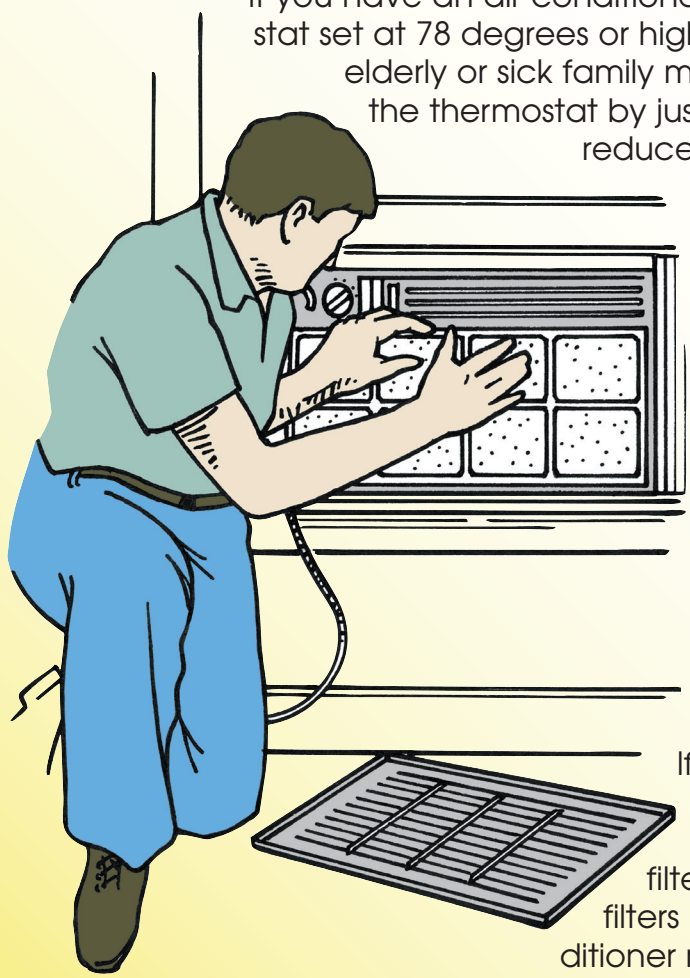
If you have a fireplace, don't use it. Fireplaces are very inefficient. When the fireplace is not in use keep the damper closed. An open damper is like having a 48-inch window open because it allows warm indoor air out the chimney.

During the cooling season do the following:



If you have an air conditioner, keep the thermostat set at 78 degrees or higher, unless you have elderly or sick family members. Increasing the thermostat by just 1 degree can reduce your cooling bill by 2 percent.

Don't set your thermostat at a colder setting than normal when you turn on your air conditioner. It will not cool your house any faster and could result in excessive cooling and unnecessary expense.

If you have a central air conditioner, replace the furnace filter monthly. Clean filters in a window air conditioner monthly. A dirty filter reduces the efficiency of the air conditioner.

Don't place lamps or TV sets near your air-conditioning thermostat. The thermostat senses heat from these appliances, which could cause the air conditioner to run longer than necessary.

If you have central air conditioning don't block the registers inside the house.

Run ceiling and room fans, even if you have air conditioning. This will move the cooled air more effectively throughout the home.

If you have a central air-conditioning unit, make sure that airflow to the outside unit is not blocked and the unit is kept clean.

Try to locate air-conditioning units in the shade. A unit operating in the shade uses 10% less electricity than one that is exposed to the sun.

Keep windows closed during the hottest time of the day. During the early morning hours and at night, open windows opposite one another for cross ventilation.

When possible, use heat-generating appliances like ovens and cloths dryers in the early morning and evening hours when it is cooler.

After bathing or showering, use bath exhaust fans to remove the heat and moisture.

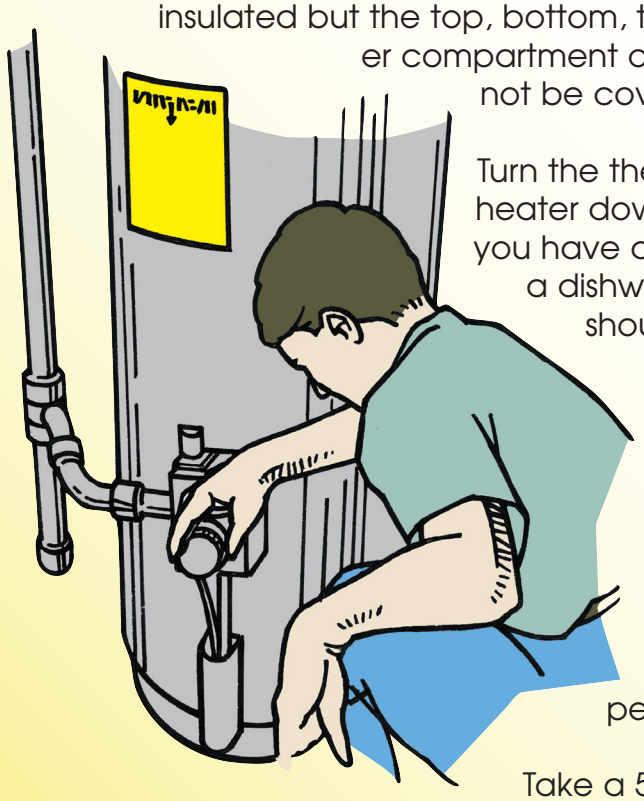
Keep shades and curtains closed during the day to keep the sun's warm rays from heating the inside of your home.

If you have a fireplace, keep the damper closed during the summer so cool indoor air doesn't escape up through the chimney.

WATER

After heating and cooling, water heating is the next biggest energy user in your home. It can account for about 14% of your utility bill. Following are ways to reduce your hot water usage and thereby reduce your utility bills:

Water heaters installed before 1980 should be insulated. Insulation kits made for water heaters are available at local hardware and home improvement stores. Electric water heaters and pipes can be insulated, but the thermostat must be left uncovered. Gas water heaters and pipes can be insulated but the top, bottom, thermostat, and the burner compartment of the water heater must not be covered.



Turn the thermostat on the water heater down to 120 degrees unless you have a dishwasher. If you have a dishwasher, the thermostat should be at 140 degrees.

Install low-flow showerheads and faucet aerators.

Repair leaky faucets and water lines. A leaky faucet can waste gallons of water in a short period of time.

Take a 5-minute shower rather than a bath. A 5-minute shower uses half as much hot water as a bath.

Don't run water constantly when you wash dishes, wash your hands and face, or brush your teeth.

YOUR HOUSE – THE SHELL

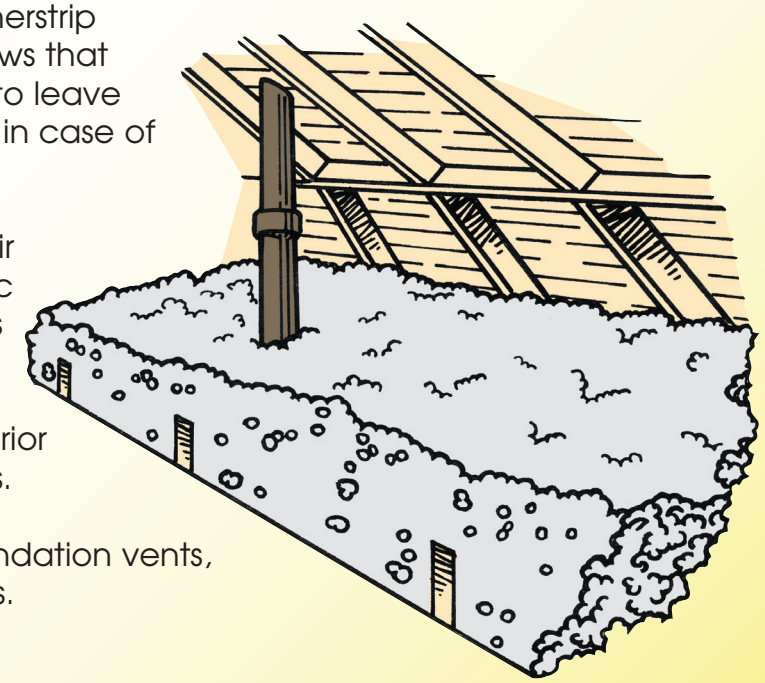
Warm air leaking into your home during the summer and out of your home during the winter can waste a lot of energy and cause your energy bills to be higher. Following are some steps you can take to reduce the amount of air that leaks into and out of your home.

The recommended depth of insulation in an attic is 12". Keep all windows and doors shut when using the furnace or air conditioner.

Repair or cover broken glass in windows.

Put plastic on windows in winter if needed.

Caulk and weatherstrip doors and windows that leak air. Be sure to leave an escape route in case of a fire.



Caulk and seal air leaks around attic doors and outlets on exterior walls.

Seal holes in exterior walls and ceilings.

Close or seal foundation vents, holes, and cracks.

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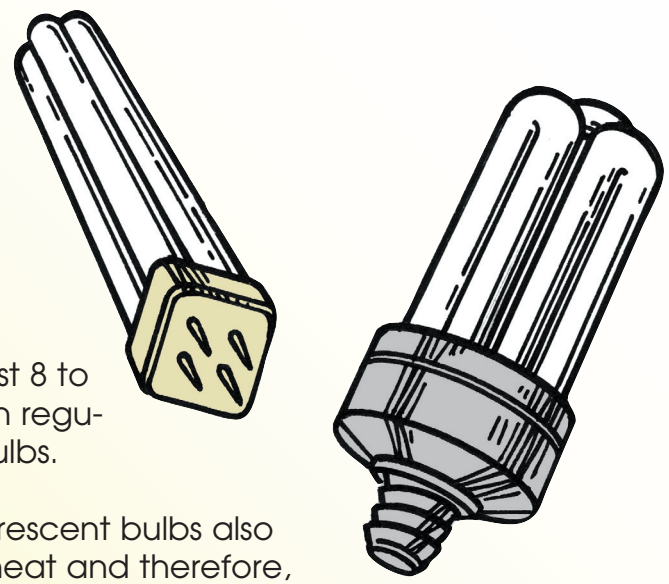
LIGHTING

- Turn off lights that are not needed.
- Teach your children to turn lights off as they leave a room.
- Replace frequently used (4 hours or more) light bulbs with high efficient fluorescent bulbs.
- High efficient fluorescent bulbs put out as much light as regular incandescent bulbs but use from 50 to 75 per cent less electricity.
- High efficient fluorescent bulbs last 8 to 10 times longer than regular incandescent bulbs.
- High efficient fluorescent bulbs also give off much less heat and therefore, don't make your home warmer in the summer.



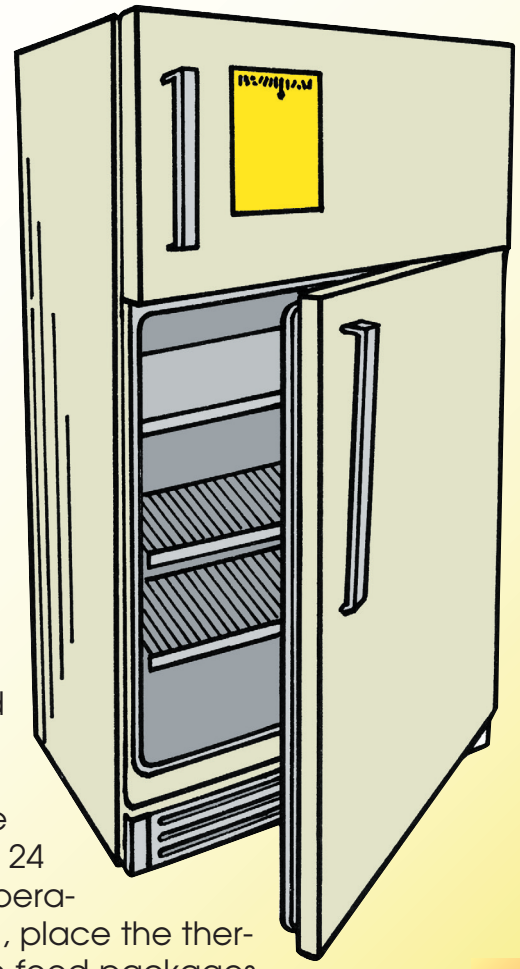
APPLIANCES

When you buy a new appliance look for the Energy Star® and Energy Guide label which identifies the most efficient appliances.

Refrigerators and Freezers

A refrigerator uses about 20 percent of the average house's electricity. There are things you can do to help ensure that your refrigerator runs more efficiently and therefore costs you less.

Don't keep your refrigerator too cold. The temperature for the fresh food compartment should be between 37 and 40 degrees and the temperature for the freezer section should be between 0 and 5 degrees. Check the temperature in both sections with a thermometer to make sure they are not running too cold and wasting energy. To check the temperature in the fresh food section, place the thermometer in a glass of water in the center of the refrigerator. Read it after 24 hours. To check the temperature in the freezer section, place the thermometer between frozen food packages and read it after 24 hours.



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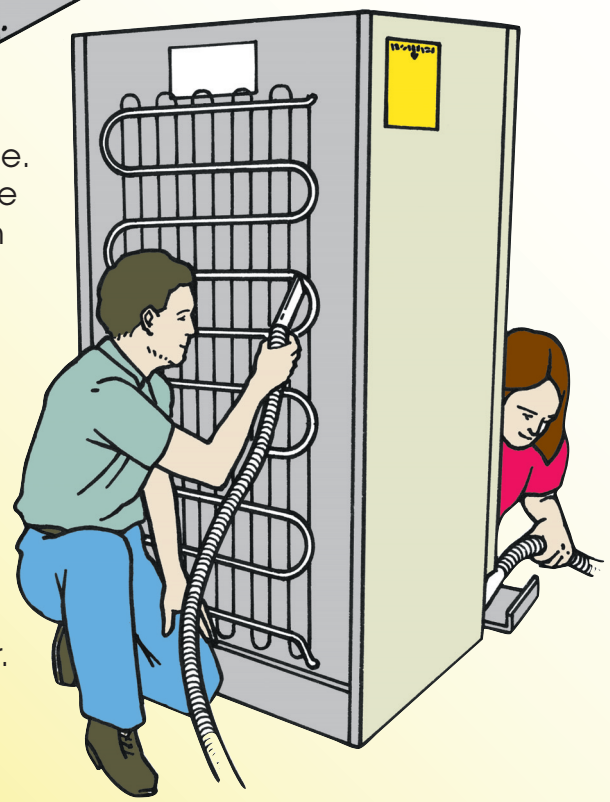
Clean the dust off the condenser coils at the back or bottom of the refrigerator once a year. Dirty coils make the refrigerator work harder and use more electricity.

Regularly defrost manual-defrost refrigerators and freezers. Frost buildup decreases the energy efficiency of the appliance. Don't allow the frost to build up more than one-quarter of an inch.

Open and close refrigerator and freezer doors as little as possible. The interior temperature of your refrigerator can increase 10 degrees to 20 degrees each time you open the door.

Make sure the refrigerator seals are air-tight. Test them by placing a piece of paper so it is half way in and half way out of the refrigerator.



If you can pull the paper out easily, the latch may need to be adjusted or the seal may need to be replaced.

Cover liquids and wrap foods stored in the refrigerator. Uncovered foods and liquids release moisture and make the refrigerator work harder and use more electricity.

If you have a second refrigerator, consider unplugging it. You can save a lot on your electric bill by using only one refrigerator.

If you are buying a new refrigerator or freezer consider the following:

- Buy a high efficiency model, this could save you more than $100 a year in electric costs.
- Buy one no bigger than you need. Larger ones cost more to operate.
- Manual defrost refrigerators cost the least to operate. Automatic defrost refrigerators cost the most to operate.
- Side-by-side refrigerators cost more to operate than the type that has the freezer on the top, or bottom.
- Consider models that do not include automatic icemakers and door-mounted ice and water dispensers. Refrigerators containing these features, use more electricity than those that do not have these features.

Waterbed

If you have a waterbed, keep it covered with blankets or water bed mattress covers to retain the heat and make the water bed heater work less.

Washers and Dryers

About 80% to 85% of the energy used for washing clothes is for heating the water. For most situations, washing clothes in warm or cold water does a good job of cleaning. Using the warm water rather than the hot water can reduce energy use by half.

Use a cold rinse cycle. It does not affect the cleaning results.

Wash clothes in cold water using cold-water detergents.

Wash and dry full loads. This reduces the number of loads and therefore saves money.

Don't over-dry clothes. Hang clothes out to dry when possible.

Clean the lint filter in the dryer after every load. This improves air circulation, which means that the clothes will dry faster and the dryer does not have to run as long.

Estimated Average Costs of Using Common Electric Appliances

The following are estimated monthly and annual costs of some commonly used electric appliances.

Appliance	Monthly operating costs	Annual operating costs
Water heater for 4 persons	$32.00 - $44.00	$384.00 - $528.00
for 2 persons	12.00 – 28.00	144.00 – 336.00
Refrigerator	3.20 – 16.00	38.40 – 192.00
Freezer	3.20 – 16.00	38.40 – 192.00
Water bed heater	3.20 – 14.00	38.40 – 168.00
Clothes dryer (electric)	4.00 – 12.00	48.00 -144.00
Color TV	0.48 – 6.80	5.76 –81.60
Range with oven	2.40 – 4.80	28.80 – 57.60
Dishwasher	1.60 – 4.00	19.20 – 48.00
Microwave oven	0.80 – 1.60	9.60 – 19.20
Washing Machine	0.32 - 0.96	3.84 – 11.52

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HEALTH AND SAFETY

Combustion Appliances

Combustion appliances are not maintenance free. They need regular cleaning and inspection. Should you suspect an appliance is malfunctioning call a professional service technician.

Combustion appliance	Combustible fuels
• furnace	• natural gas
• space heater	• propane
• wall furnace	• fuel oil
• water heater	• kerosene
• cook stove	• charcoal
	• wood

Keep items, especially any that could catch on fire, away from the furnace and water heater.

Do not use unvented combustion space heaters. Unvented combustion space heaters (unvented wall furnaces or water heaters) using propane, fuel oil, kerosene, natural gas, charcoal, or wood give off various dangerous combustion gases. Since these gases are not properly vented to the outside of the house unvented heaters are dangerous.

Keep all space heaters, including electric heaters, away from anything that could catch on fire such as drapes, furniture, clothes, and papers.

Do not use your cook stove to heat your home. Cook stoves are not designed for this purpose and they could be dangerous to use for heating. They may produce combustion gases such as carbon monoxide, excessive moisture, and are inefficient.

If you have a gas cook stove, keep the burners and oven clean so the flame will burn cleanly.

If you burn wood, check the chimney or flue to make sure it is not blocked. If it is, have the chimney cleaned by a professional.

Check the chimney for signs of decay and to make sure it is intact.

Moisture

It is important to control the amount of moisture in your home. Too little moisture can lead to breathing problems, dry skin, and increased growth of bacteria and viruses. Too much moisture can lead to the growth of mold and mildew, asthma, and the rotting and decaying of parts of homes. The moisture level should be between 40 and 50 percent relative humidity. Following are some steps you can take to try to control the amount of moisture in your home:

Excess moisture in your home may be caused by flue gas not venting due to improperly installed or plugged chimney. This is a potentially dangerous situation, a qualified furnace technician should be contacted.

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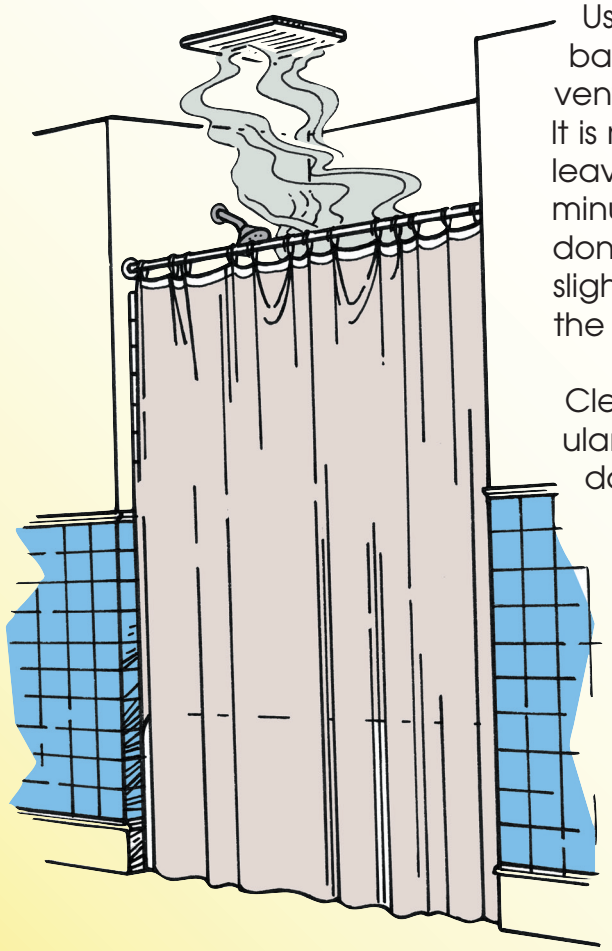
Cover pots when boiling water.

Use kitchen fans when cooking to vent moisture to the outside.



Use bathroom fans when bathing and showering to vent moisture to the outside. It is recommended you leave the bath fan on for 30 minutes after bathing. If you don't have a bathroom fan, slightly open a window in the bathroom.

Clean rain gutters on a regular basis. Repair or replace damaged gutters.

Repair plumbing leaks and roof leaks.

Cover exposed dirt floors in crawlspaces with plastic.

Exhaust the clothes dryer to the outside of your home.

Do not use "heat knappers" to recover heat from the dryer vent hose. They direct too much moisture into your home.

Carbon Monoxide

Carbon monoxide is a poisonous gas that has no taste, no color and no smell. Carbon monoxide (CO) is produced by burning any fuel. Any combustion appliance in your home is a potential source of CO.

When your combustion appliances are kept in good working condition, they will produce a small amount of CO. Improperly operating combustion appliances can produce fatal amounts of CO in your home.

Using unvented space heaters, burning charcoal indoors, or running a car in a garage can also cause CO poisoning.

Symptoms of CO Poisoning

- Dizziness
- Fatigue
- Headache•Nausea
- Irregular breathing
- Confusion

Many of the initial symptoms of CO are similar to the flu (without the fever).

While most of us know that high levels of CO are deadly, what is less known is that CO is a cumulative poison. Lower levels of CO, over a period of time, can cause persistent symptoms. The harmful effects of carbon monoxide exposure depend on both the concentration of CO in the air and length of exposure.

CO builds up in the bloodstream where it combines with blood hemoglobin. CO replaces the oxygen in the bloodstream until there is too little oxygen in the bloodstream to support life.

Be aware that when family members suffer from flu-like symptoms that improve when they leave the home for extended periods, CO poisoning may be the cause.

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Clues you can see...

- Rusting or water streaking on vent or chimney
- Loose or missing furnace panel
- Disconnected return duct work
- Cold Air / return duct open in furnace area
- Soot or debris anywhere around the vents, chimney, chimney cap, furnace, water heater, stove, space heater, or fireplace.
- Loose or disconnected vent / chimney connections
- Loose masonry on chimney
- Moisture on the interior side of windows

Clues you may not see...

- Internal appliance damage or malfunctioning components
- Improper burner adjustments
- Blockage or damage inside chimneys

How can I avoid CO poisoning?

The most important steps are preventive ones. Never use unvented combustion appliances for heating. Have a qualified service professional inspect your combustion appliances at least once a year. Install an electric or battery powered CO ALARM. TRUST YOUR ALARM, if it indicates a carbon monoxide problem, have your home thoroughly investigated until the CO source is found.

Iowa Weatherization and Community Action Agencies

(Contact for further information)

City of Des Moines
Community Development Department
602 E. 1st Street
Des Moines, IA 50307
515-283-4180

Community Opportunities, Inc.
603 W. 8th St.
P.O. Box 427
Carroll, IA 51401-0427
712-792-9266

Hawkeye Area Community Action Program
1515 Hawkeye Dr.
P.O. Box 490
Hiawatha, IA. 52233
319-393-7811

Iowa East Central T.R.A.I.N.
2804 Eastern Ave.
Davenport, IA 52803
563-324-8239

MATURA Action Corporation
203 W. Adams
Creston, IA 50801
641-782-8431

Mid-Iowa Community Action, Inc.
1001 S. 18th Ave.
Marshalltown, IA 50158
641-752-7162

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Mid-Sioux Opportunity, Inc.
418 Marion St
P.O. Box 390
Remsen, IA 51050
712-786-2001

North Iowa Community Action Organization
218 5th St., SW
P.O. Box 1627
Mason City, IA. 50402
641-423-8993

Northeast Iowa Community Action Corporation
305 Montgomery
P.O. Box 487
Decorah, IA 52101
563-382-9608

Operation: New View
1473 Central Ave.
Dubuque, IA 52001-4853
563-556-5130

Operation Threshold
300 W. 3rd St.
Waterloo, IA. 50701
319-291-2065

Red Rock Area Community Action Program
305 S. Jefferson
Indianola, IA 50125
515-961-6271

Polk County Weatherization Program
5885 NE 14th St.
Des Moines, IA 50313
515-286-2135

South Central Iowa Community Action Program, Inc.
1403 NW Church St.
Leon, IA 50144
641-446-4155

Southeast Iowa Community Action
2850 Mt. Pleasant St. Suite 108
Burlington, IA 52601
319-753-0193

Southern Iowa Economic Development Association
226 W. Main St. P.O. Box 658
Ottumwa, IA 52501-0658
641-682-8741

Upper Des Moines Opportunity, Inc.
806 Broadway; P.O. Box 353
Emmetsburg, IA 50536
712-852-3889

West Central Development, Corporation
1108 8th St. P.O. Box 709
Harlan, IA 51537
712-755-5618

Woodbury County Community Action
2700 Leech
Sioux City, IA 51106-1100
800-352-3725

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(TTY) 800-735-2942
(Relay Iowa) 800-735-2943 (voice)