Conserve At Home:
A Homeowner’s Guide to Saving Money
Energy Conservation Resources

❖ State of North Carolina Energy Office
   http://www.nccommerce.com/energy

❖ N.C. Cooperative Extension
   http://www.ces.ncsu.edu/depts/fcs/housing.html

❖ N.C. Division of Pollution Prevention and Environmental Assistance
   http://www.p2pays.org/

❖ Insulation Web page
   http://www.ornl.gov/sci/roofs+walls/insulation/ins_01.html

❖ U.S Department of Energy
   http://www.energysavers.gov/

❖ Energy Star
   www.energystar.gov

Water Conservation Resources

❖ N.C. Cooperative Extension
   http://www.ces.ncsu.edu/depts/hort/consumer/hortinternet/water_conservation.html

❖ Save Water NC
   http://savewaternc.org/

❖ U.S. Environmental Protection Agency Water Sense
   http://www.epa.gov/watersense/index.html

❖ U.S. Federal Emergency Management Agency

❖ Water Use It Wisely
   http://www.wateruseitwisely.com/

As an extension of the university, this organization serves all NC citizens by providing research-based information.
Be Energy Wise...Conserve at Home

Is your home cold, drafty, or uncomfortable? There could be a reason. If you were to add up all the airflow that goes in and out of our homes through cracks and crevices it would be equal to the size of a garage door being open fulltime. The key is a lifestyle change and to be conscious of your energy consumption. By simply changing a few things in your home you can reduce the amount of energy you are using, make your home more comfortable and keep your hard earned money in your pockets.

WEATHERIZE YOUR RESIDENCE
- Replace worn weather stripping on exterior doors, windows, or attic entry doors.
- Make sure insulation is placed correctly in the attic, crawlspace and/or basement for full coverage and efficiency.
- Caulk leaky doors or windows and put foam inserts behind outlet covers.
- Wrap exposed water piping and the hot water tank with insulation.
- Insulate the pull-down attic stairs.

HEATING AND COOLING
- Change your electric bill to get special “time of use” rates and take control of your thermostats.
- Install a programmable thermostat compatible with your heating/cooling system and set the thermostat to 68 °F in the winter.
- Check your hot water heater thermostat and make sure it is set at 120 °F.
- For central air conditioning systems, keep the fan switch on your thermostat in the “auto” position when cooling/heating. Having the fan switch “on” continuously can cost up to $25 extra a month on your electric bill.
- Be certain furniture or other items do not block the return air grill inside your house. DO NOT close your air vents or block them to reduce the air going into a room. Why? The system is designed to run with all vents open and closing overworks it and can cause permanent damage.
- Open shades and draperies on south-facing windows to let the sun heat your home during the day then close shades at sundown to help insulate your rooms.
- Rearrange your rooms so furniture is near interior walls. Exterior walls and older windows are likely to be drafty.

APPLIANCES
- Use appliances efficiently. Wash only full loads of dishes and clothes. Check the owner's manual to learn about special energy-saving features.
Whenever possible, wash clothes in cold water; use hot water only when necessary.
Air dry dishes instead of using your dishwasher's drying cycle.
Use the microwave for cooking and preparing meals, when possible.
Clean your refrigerator coils twice per year, replace air filters monthly or as needed, and clean the lint from the dryer's filter after each load. The efficiency goes down when dirt collects.
Try to keep the refrigerator door open no longer than necessary. For food safety reasons set the refrigerator to 34-38 °F and the freezer to 0 °F or colder.
Use kitchen, bath and other ventilating fans wisely.
Eliminate wasted energy. When not in use, turn off lights and electronic equipment. Many types of electronics use electricity even when they are switched “off.” Plug devices you use often into a power strip and switch off the power strip.

LIGHTING
Make lighting changes – use compact fluorescent lights (CFLs). Start with the lights you use the most often and the longest periods of time. CFLs last up to 10 times longer than standard bulbs. For example you might spend $15 on the electricity and actual CFL but you would have to spend $60 in electricity and 10 regular bulbs for the same light.
Turn off the lights in the rooms you are not using. Consider installing timers or sensors to reduce the amount of time your lights are on.
Use task lighting. Instead of lighting an entire room, focus the light on where you need it.

BE WATER SMART
Install low-flow showerheads and faucets.
Shorten your shower time instead of taking a full tub bath. Showers account for two-thirds of your water heating costs.

If you really want to improve the efficiency of your home, especially if you have high energy bills or your home is uncomfortable, consider contacting your utility company to see if they offer free or discounted energy audits to their customers. If not, you can hire a home energy professional, such as a certified Home Energy Rater, to evaluate your home's energy efficiency.
Common Leak Locations

Many air leaks and drafts are easy to find because they are easy to feel — like those around windows and doors. But holes hidden in attics, basements, and crawlspaces are usually bigger problems. Sealing these leaks with caulk, spray foam, or weather stripping will have a great impact on improving your comfort and reducing utility bills.

Homeowners are often concerned about sealing their house too tightly; however, this is very unlikely in older homes. A certain amount of fresh air is needed for good indoor air quality and there are specifications that set the minimum amount of fresh air needed for a house. If you are concerned about how tight your home is, hire a contractor, such as a Home Energy Rater, who can use diagnostic tools to measure your home's actual leakage. If your home is too tight, a fresh air ventilation system may be recommended.

After any home sealing project, have a heating and cooling technician check to make sure that your combustion appliances (gas- or oil-fired furnace, water heater, and dryer) are venting properly.
### Products To Help Your Home Be More Energy Efficient

<table>
<thead>
<tr>
<th>Item</th>
<th>Approximate Cost</th>
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</thead>
<tbody>
<tr>
<td>Auto Shut-off Night Light</td>
<td>$2-$6</td>
</tr>
<tr>
<td>60 Watt Compact Fluorescent Light</td>
<td>$3 or 4 for $6</td>
</tr>
<tr>
<td>Programmable Thermostat</td>
<td>$30-$100</td>
</tr>
<tr>
<td>Low Flow Faucet /Showerhead</td>
<td>$5-$30</td>
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<tr>
<td>Weather Stripping</td>
<td>$2</td>
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<tr>
<td>Caulk Gun and Caulk</td>
<td>$4</td>
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<tr>
<td>Caulk Rope</td>
<td>$4.50 per roll</td>
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<tr>
<td>Doorsweep</td>
<td>$7-$10</td>
</tr>
<tr>
<td>Foam pipe insulation</td>
<td>$2-$8</td>
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<tr>
<td>Refrigerator Coil Brush</td>
<td>$5</td>
</tr>
<tr>
<td>Wall/Switch Plate Sealers</td>
<td>$2</td>
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Frequently Asked Questions
Information on Compact Fluorescent Light Bulbs (CFLs) and Mercury

Why should people use CFLs?
In the average U.S. home, lighting accounts for about 20% of the electric bill. The easiest way to start saving energy is to change out the light bulbs in your current fixtures for more energy efficient ones. One high-quality compact fluorescent light bulb (CFL) will save about $30 over its lifetime and pay for itself in about 6 months. It uses 75% less energy and lasts about 10 times longer than a traditional incandescent bulb. Nationally, the energy savings potential is significant.

If every home in America replaced just one incandescent light bulb with an ENERGY STAR qualified CFL, it would save enough energy to light more than 3 million homes, reduce energy costs by $600 million and prevent greenhouse gas emissions equivalent to those of more than 800,000 cars annually.

Do CFLs contain mercury?
CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 5 milligrams, which is roughly equivalent to an amount that would cover the tip of a ball-point pen. No mercury is released when the bulbs are intact or in use. By comparison, older thermometers contain about 500 milligrams of mercury. It would take 100 CFLs to equal that amount.

Mercury currently is an essential component of CFLs and is what allows the bulb to be an efficient light source. Many manufacturers have taken significant steps to reduce mercury used in their fluorescent lighting products.

What is mercury?
Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Utility power plants (mainly coal-fired) are the largest man-made source, because mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Energy efficient CFLs present an opportunity to prevent mercury emissions from entering the environment because they help to reduce emissions from coal-fired power plants. Coal-fired power generation accounts for roughly 40% of the mercury emissions in the U.S. EPA is implementing policies to reduce airborne mercury emissions. Under regulations EPA issued in 2005, mercury emissions from coal-fired power plants will drop by nearly 70% by 2018.

What should I do with a CFL when it burns out?
EPA recommends that consumers take advantage of local recycling options for compact fluorescent light bulbs, where available. Consumers can contact their local municipal solid waste agency directly, or go to www.lamprecycle.org and click on “State Lamp Recycling Regulations & Contacts” to identify local recycling options. You can take used CFLs to your local hardware store or 3RC on Martin Luther King Dr in Winston-Salem (free for Forsyth County residents). ENERGY STAR qualified CFLs have a warranty. If the bulb has failed within the warranty period, return it to your retailer.
What precautions should I take when using CFLs in my home?
CFLs are made of glass and can break if dropped or roughly handled. Be careful when removing the bulb from its packaging, installing it, or replacing it. Always screw and unscrew the lamp by its base (not the glass), and never forcefully twist the CFL into a light socket. If a CFL breaks in your home, follow the clean-up recommendations below. Used CFLs should be disposed of properly (see below).

How should I clean up a broken CFL bulb?
EPA recommends the following clean-up and disposal guidelines:

1. Have people and pets leave the room.
2. Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.
3. Shut off the central forced air heating/air-conditioning system, if you have one.
4. Remove all materials you can without using a vacuum cleaner.
   • Wear disposable rubber gloves, if available (do not use your bare hands).
   • Carefully scoop up the fragments and powder with stiff paper or cardboard.
   • Wipe the area clean with a damp paper towel or disposable wet wipe.
   • Sticky tape (such as duct tape) can be used to pick up small pieces and powder.
3. Place all cleanup materials in a plastic bag and seal it.
   • If your state permits you to put used or broken CFLs in the garbage, seal the CFL in two plastic bags and put into the outside trash (if no other disposal or recycling options are available).
   • Wash your hands after disposing of the bag.
4. Promptly place all bulb debris and cleanup materials outdoors in a trash container or protected area until materials can be disposed of properly. Avoid leaving any bulb fragments or cleanup materials indoors. If practical, continue to air out the room where the bulb was broken and leave the heating/air conditioning system shut off for several hours.

For more information on all sources of mercury, visit http://www.epa.gov/mercury.

For more information about compact fluorescent bulbs, visit http://www.energystar.gov/index.cfm?c=cfls.pr_cfls

EPA is continually reviewing its clean-up and disposal recommendations for CFLs to ensure that the Agency presents the most up-to-date information for consumers and businesses.
Be Water Wise...Conserve at Home

Water is the most common substance found on Earth and is one of our most precious resources. As the demand for water rises because of little to no rain as well as population growth, the more we will need clean, abundant water supplies. In order to ensure that an adequate supply of water will be available for years to come, it is important that we pay attention to how much water we use and how much water we waste.

**BATHROOM**

😊 Check pipes and faucets for leaks. Even small leaks can waste significant amounts of water. Water leaks are not only a waste of water, but also of the energy needed to heat the water. A faucet that drips 1 time each second will waste almost 9 gallons per day (over 3000 gallons per year).

😊 Install water saving showerheads, faucets and toilets. Look for showerheads with 2.5 gallons per minute at maximum flow and 2.2 gallons per minute for faucets. Low flow toilets use 2 gallons per flush, while dual-flush use 0.8 gallons for liquids and 1.6 gallons for solids (old = 5 gallons/flush).

😊 Take shorter showers instead of baths. Baths use more water than a typical shower. If your shower has a single hand control or shut off valve, turn off the flow while soaping or shampooing. A 10-minute shower can use up to 70 gallons.

😊 Check the toilet for leaks. Leaks inside a toilet can waste up to 200 gallons of water per day. Toilet leaks can be detected by using several drops of food coloring in the tank. You have a leak if you see the coloring in the bowl after a few minutes.

😊 Don’t use the toilet as a wastebasket. Place a wastebasket next to your toilet to avoid this situation in the future.

😊 If you have an older toilet, fill and place a 2-liter bottle in the toilet tank. This will reduce the amount of water used each time you flush your toilet; saving about ½ gallon per flush on any toilet.

😊 Turn off the water when brushing teeth or shaving. This is a hard habit to break. Yet, collectively we could save thousands of gallons of water a day if we just turned off the faucet until we need it.

**KITCHEN AND LAUNDRY**

😊 Run the dishwasher and washing machine only when full. Standard dishwashers use 15 gallons and a washing machine set at the full cycle uses 40 gallons per wash.

😊 When new appliances are needed, look for the Energy Star label. Many new dishwashers have shorter cycles that get your dishes clean but use less energy and save up to 30% of your water use. Consider high-efficiency or a front loading washing machines which use about 25 gallons per wash, and are big energy savers.

😊 Fill the sink with water to pre-rinse dishes before putting them in the dishwasher. This is a great way to conserve water. You are not
only saving water by eliminating the process of rinsing dishes before you place them in the dishwasher but also reducing the load on your dishwasher (and perhaps preventing dishes from being washed again).

- Use the garbage disposal less often to conserve water. We usually let the water run while we dispose of food down the dishwasher. Use it only when necessary.
- Keep a pitcher of drinking water in your refrigerator. This will save water you might otherwise waste when you let the faucet run until the water is cool.
- Collect water in buckets from the sink/bath/shower while waiting for it to heat up; use for watering plants.

**LANDSCAPE**

- Locate main water shut-off valve and the water meter in your yard. Knowing where the valve is can potentially prevent the loss of thousands of gallons of water and water damage if a water pipe were to break.
- Make sure that all outdoor spigots are winterized; this could avoid pipes from freezing, bursting and losing water.
- Water only when needed (signs of plant stress) or allow plants to sleep through the drought rather than wasting water, money and effort. The average 5,000 sq ft lawn will use 2,300 gallons per week or 30,000 gallons each summer.
- Plant drought tolerant plants.
- Add hydrogels to plants that dry out quickly; these water-absorbing polymer crystals swell to several times their original size and slowly release water into the surrounding soil.
- Power Washing – postpone if possible or consider using a motorized blower or broom.
- Mulch, Mulch, Mulch. Mulching helps to slow the evaporation of moisture from the soil and keeps the soil and roots cool. It also protects the soil and roots from events such as freezing. Try to stick with organic mulches that slowly break down and add organic matter to the soil.
- Stop over watering causing runoff, especially on slopes or on compacted, dry soils. Use a soaker hose to allow moisture to soak into the ground. Nothing grows on concrete.
- Catch rainwater from your gutters in a rain barrel or cistern and use it to water plants or wash your car. 1,000 sq. ft. of roof surface will collect 623 gallons of water in every inch of rainfall.
- Redirect water from downspouts. Channel stormwater across lawns and into garden beds away from your house; consider a rain garden, which will use stormwater to thrive and create beauty around your home, school, or office.