



# The GOforChange Guide

For Practical Green Living

Created by:





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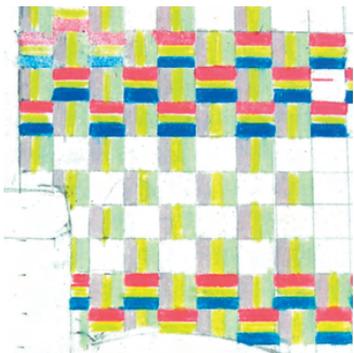
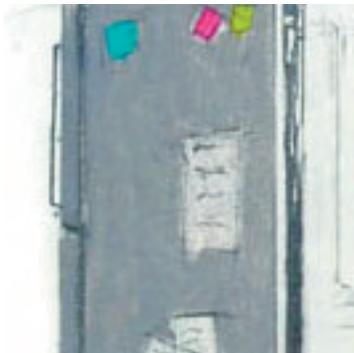
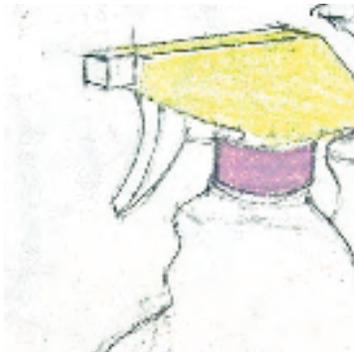
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"Everything we love can be saved."  
Alice Walker

# Introduction

The GOforChange Guide For Practical Green Living was created by GOforChange.com; a website that helps ordinary people contribute to the sustainability of the planet in powerful, life-changing ways. We are all part of a network; actually, a network of networks. We live, work, shop, play, transport, learn, interact, and rest within these networks. Every action we take is connected to many other people, businesses, energies, living things.

In this guide you will learn about the big effects that small changes can have on your finances, your health, and your impact on the environment. It is organized into six sections: saving energy, healthy house, saving water, waste recycling, and lawn and food, each section contains a wealth of information, as well as tips on what you can easily do to save money and safeguard your health and the health of the planet.

Some of the recommendations in this manual may seem to be basic common sense, but many of them are not yet part of standard practice. If you aren't already doing a handful of what's suggested here, we encourage you to try it: implement each section into your life one step at a time. Remember, all systems with which we live are connected.

To implement change, it's important not to get too hung up on the dream, and forget about acting. Thich Nhat Hanh put it best when he said, "After seeing, there must be acting. Otherwise, what's the use of seeing?"

## Acknowledgements

Julie Gabrielli and Alyssa Dennis of Gabrielli Design Studio, LLC authored this guide. It was originally created for the Louisiana Road Home Program, with funding from Enterprise Green Communities. Alyssa also did all the wonderful drawings.

### Disclaimer

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# Saving Energy

## This Section Will Cover

Energy Use

Light Bulb Options

Appliances

How you can save money

Tips

**Note** : Check Resource section for how to find things mentioned in this chapter.

The more electricity and gas we use, the more money we spend. With rising energy prices and global warming, it pays for all of us to use as little energy as we can. This guide will help you understand how energy is used in your home, provide tips on how to conserve and national statistics that will give you a sense of the bigger picture.

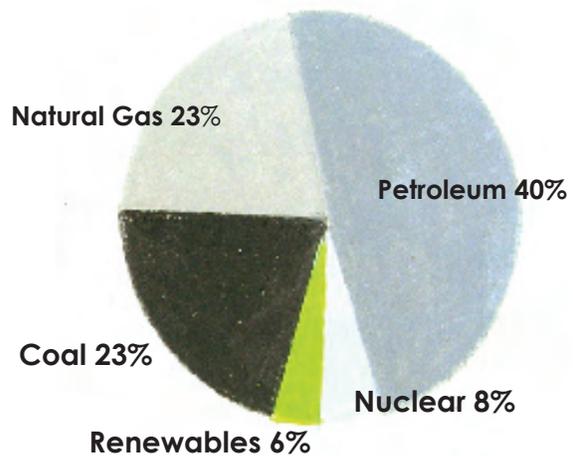
About 40% of U.S electric power generation relies on petroleum as its fuel source. Nearly 23% comes from coal fired generation, and nearly 18% from nuclear power. About one-third of all global warming pollution comes from power plants that burn coal and natural gas. They also contribute to poor air quality locally, by exhausting gases that have negative health effects:

Sulfur Dioxide (SO<sub>2</sub>) – Causes soot and acid rain, cardiovascular and respiratory health effects.

Nitrogen Oxide (NO<sub>x</sub>) – Causes smog and nitrogen pollution, and respiratory health effects.

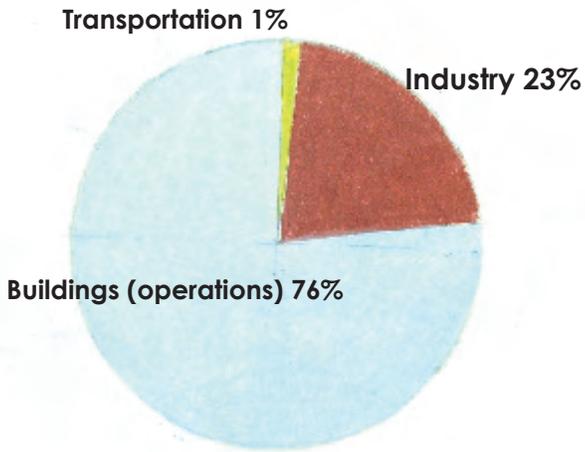
Mercury – Developmental disorders in children.

**U.S. Energy Consumption by Source, 2004**

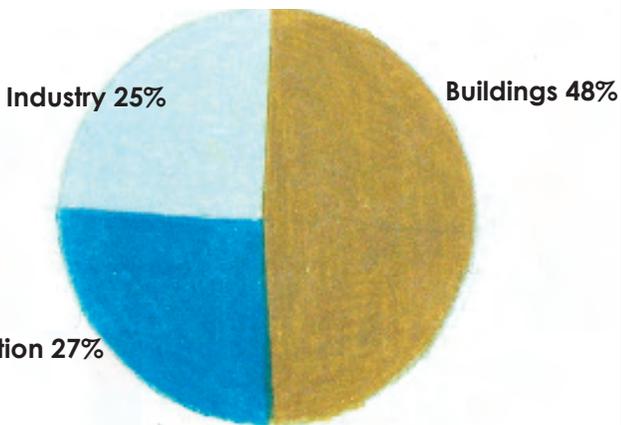


# Saving Energy

**U.S. Electricity Consumption**



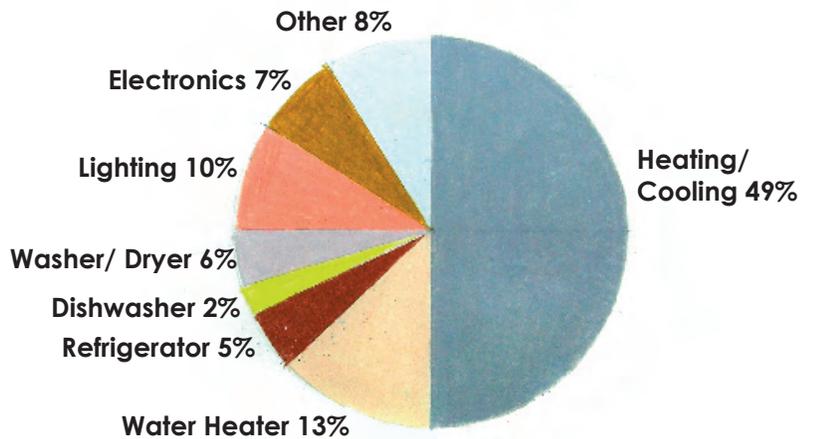
**U.S. Energy Consumption**



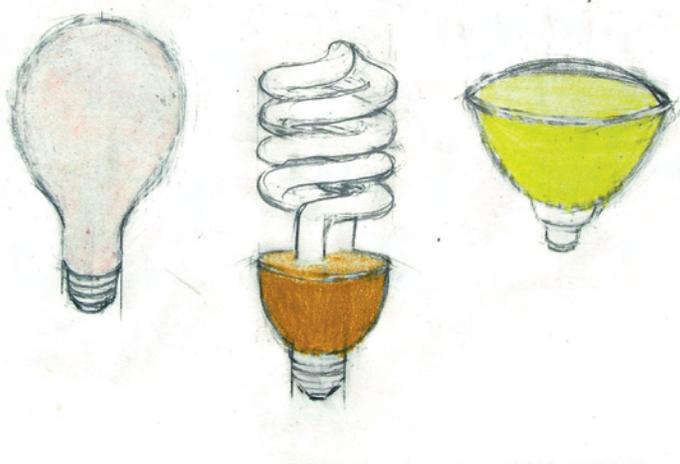
## Energy Use: In the Home

One of the most important accomplishments of modern technology is the ability to maintain desired temperatures. Our ovens, freezers, and homes can be kept at any temperature we choose, a luxury that wasn't possible 100 years ago. Keeping our homes comfortable uses a lot of energy.

While heating and air conditioning units and your appliances have certain performance levels, the way you use them can contribute greatly to how much energy these systems actually consume. Turning down your heat in the winter, and following the simple tips in this section can make a huge difference.



# Saving Energy



## Lighting

Almost one-fourth of the energy used in our homes is for lighting and appliances. Lights have revolutionized the way we live, work, and play. Replacing your incandescent lightbulbs with fluorescents (now widely available) saves a tremendous amount of energy. Here are some comparisons:

**Incandescent lamps** (or "bulbs") are the most common lighting type in American homes, available in all shapes and sizes. Unfortunately, they are very inefficient; only 10% of the electricity they use is actually converted into useable light -- the rest is wasted as heat, which explains why you can't unscrew one that's been on for a while -- ouch!

**Compact fluorescent lightbulbs (CFLs)** are becoming increasingly available as a highly efficient alternative to standard incandescent bulbs. A single 20-watt CFL will provide the same amount of illumination as a 75-watt incandescent light bulb and last up to seven times longer. The table below shows how much you can save by making the switch.

CFL bulbs sold today are comparable in light quality to incandescent lamps and are easily compatible with standard screw-in lamp fixtures of several common styles. For the best compatibility with standard-size screw-in fixtures, look for the spiral-shaped mini sub-compact fluorescent lamps, which are much smaller than conventional CFLs and are available for \$1.00 to \$4.00 each.

### CFL Savings

Lamp use	Savings after 1 yr	Savings after 2rd yr	Savings after 3rd yr	Savings after 5th yr	Savings after 6th yr
2 hrs/day	\$0.21	\$4.40	\$8.60	\$17.00	\$38.10
4 hrs/day	\$4.40	\$12.90	\$21.30	\$38.10	\$72.30
8hrs/days	\$12.90	\$29.70	\$46.60	\$72.30	\$153.80
12 hrs/day	\$21.30	\$46.60	\$67.83	\$114.40	\$232.00

Price of electricity: \$0.086/kWh

**Fluorescent Bulbs** depend on trace amounts of mercury to operate. Mercury is a toxic substance and consumers should be aware of household products that contain the substance. However, it is important to note that CFLs save 2-10 times more mercury from the environment by avoiding pollution from coal-fired power plants. The amount in each bulb is not significant enough to pose a health risk in your home. But these bulbs should be disposed of properly, like batteries, to minimize their impact on landfills.

**Halogen Bulbs** cost a couple cents an hour to operate, which can add up to \$50 a year. Halogen bulbs waste the most energy of all lightbulbs and can be a fire hazard because they get extremely hot.

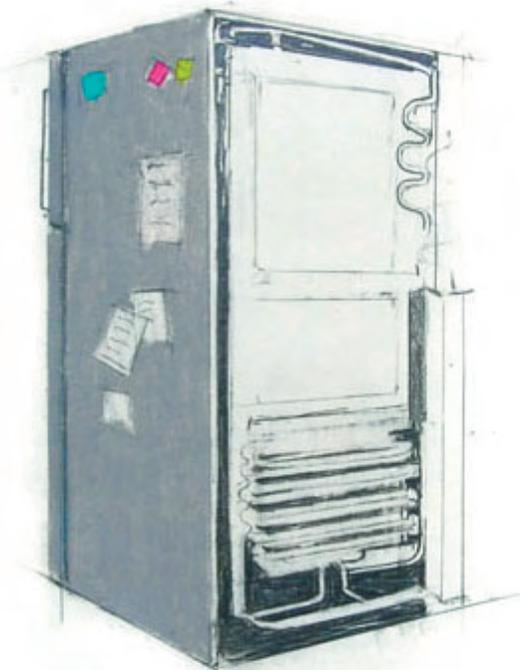
**Note:** if any bulb should break check resource page for disposal.

# Saving Energy

## Tips

Remember to always keep dust away from anything electronic. Dust acts as insulation and will over-heat your device; use a vacuum to clean dust from coils behind the refrigerator twice a year.

Don't use the heated drying mode on the dishwasher; most of the energy is used by that setting. Use the "Energy Saver" setting, or open the dishwasher and let everything air dry.



## Appliances

**TV, VCR, alarm clocks, microwaves, CD players, computers, etc.** These appliances waste energy even when they're turned OFF. Save \$10-12 dollars a year by plugging as much as you can into a Smart Strip and turn off the strip when not using. Even without a Smart Strip, you can simply unplug devices when not in use.

**Note** : If any appliance makes noise or is warm to the touch this is accounts for energy loss as well.

**Stove vs Oven and Microwave-** If you have a gas stove, make sure flames don't rise above the bottom of the pot, which will waste heat. Add salt to water to help boil faster. For small meals, use a toaster-oven or a microwave instead of the oven. Avoid microwaving food in plastic containers. Most plastics are unstable, and can leach into hot or acidic foods. If you do re-heat with a microwave, use a glass dish or ceramic plate.

**(Note** : check recycling section for more info)

**Dishwasher-** A full load is more efficient than washing in the sink. If you don't have a dishwasher, you can always use your dirty water for your plants. Food residue can be great for extra nutrients in soil. Be sure to use biodegradable dish soap when doing this or you will be adding harmful toxins to the soil. **Note** : Biodegradable substances do not include chemicals and can be broken down with other living organisms.

**Refrigerator-** Clean coils in the back to remove dust and debris. Dust acts as insulation, so heat can't escape, making the refrigerator work harder to keep things cold. Try to keep the refrigerator and freezer full. Wasted space is wasted energy. Check temperature: most foods don't need a setting any cooler than 4-6. Using an inexpensive thermometer, you can check the temperature of your fridge, which should range between 35-38 degrees Fahrenheit.

**Washers & Dryers** - Look for systems that allow you to optimize load size, set water temperature, have energy-saving features, and reduce drying time. Choose a laundry detergent labeled-phosphate-free, biodegradable, non-toxic. Unscented products usually include borax and baking soda. In all cases, use only the recommended amount of detergent. Using more does not leave your clothes any cleaner, and it also deposits soap residue in the fibers. Make sure to run full loads or use the washer's adjustable settings. Set rinse cycle on cold; having it on warm doesn't get clothes cleaner and it wastes energy. Hanging clothes on a line outside saves energy and prolongs the life of your wardrobe. When using a dryer you can save on drying time by combining similar fabrics together and drying multiple loads in quick succession to take advantage of residual heat. Clean out lint trays before every load, and around the outside vent. Excess lint reduces efficiency, and can cause overheating.

# Saving Energy

## Tips

Check if your energy company has time-of-use savings: in some places it's cheaper to run big appliances between 9pm and 7am. Power is at its most expensive 7-11am and 5-9pm.

Keep in mind that heat rises, which means it is most efficient when under your feet. Regular outlet adaptable radiant floor mats or heating blankets are relatively cheap when compared with the long term energy use and can be more efficient than upright coil models or forced air.

If you have central heating or cooling, close off vents in rooms you're not using them.

## Appliances

### Heating and Cooling

Heat should never exceed 65-68 degrees F in cooler months. Turn down your thermostat when not at home. If you are going to be gone for more than a day, turn down temperature to 45-50 degrees F.

Instead of air-conditioning, use a dehumidifier. When possible, install a programmable thermostat. If your home already has one, use the manual to set it based on your schedule. For instance, in the winter, you can set it to a cooler temperature at night, when you are asleep. You can program the time when you want your heat to come on, so the house is comfortable for your morning routine. You can set it cooler during the daytime if you will be at work or school. The same can be done in the summer, in reverse. This way, your heating and cooling systems are not working unnecessarily when you are asleep or away.

### Water Heater

Does your tap water scald you? If so, your water heater temperature is set to high. The hot water shouldn't be more than 120 degrees F. Anything hotter is a waste of energy and money, and a potential danger to you and your family.

If either your water heater or the pipes coming from it are warm to the touch, this is wasted heat, which makes the system work harder. Insulate your water heater and pipes. The website below has easy step-by-step instructions on how to install a simple insulation blanket on the water heater. If you rent try passing this information on to your landlord.

<http://www.cornerhardware.com/howto/ht063.html>



# Healthy House

## This Section will Cover

Maintaining Healthy Indoor Air

Why Indoor Air is Unhealthy

How to Save Money

What is Off-Gassing?

Tips

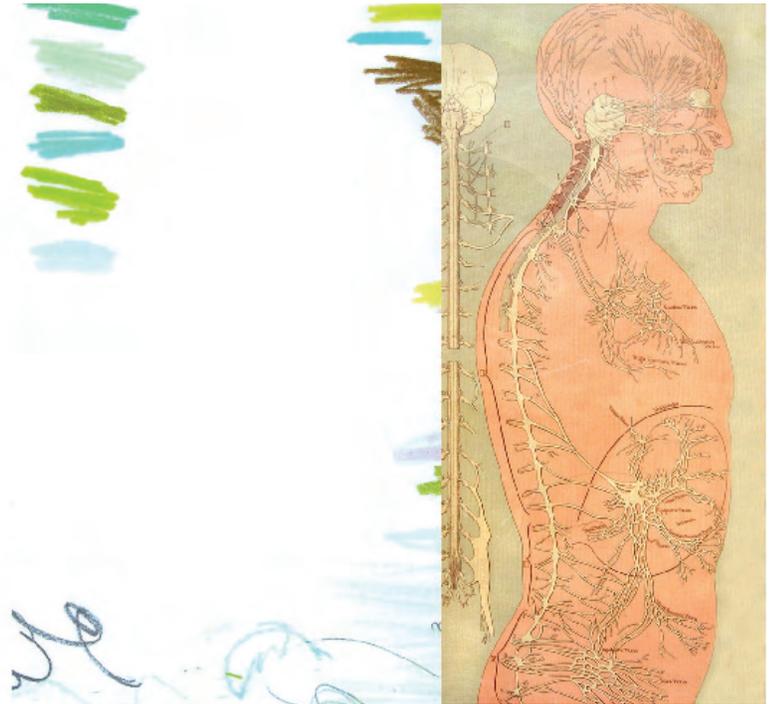
**Note** : Check Resource section for how to find things mentioned in this chapter.



All of us face a variety of risks to our health as we go about our lives: driving in cars, flying in planes, and other activities. Being exposed to environmental pollutants poses varying degrees of risk. Some risks are simply unavoidable, or out of our control. Some risks we would undoubtedly avoid if we had the opportunity to make informed choices. Indoor air pollution is one risk that you can do something about.

### Common causes

- Moisture Control
- Cleaning products
- Air fresheners
- Dust
- Heating and cooling equipment
- Smoking
- Paint



Think of the human body as a sponge, because basically it is. Our bodies absorb water, nutrients and almost anything that touches us or enters the air. Our bodies are amazingly resilient to bacteria and continue to fight for our health even when presented with compromising situations. However, when the human body exposed to toxins for a prolonged period of time, it starts to reveal effects which seem to come out of nowhere. This is why we are just now finding out the real dangers of synthetic chemicals.

# Healthy House

## Tips

Be aware of the musky odor of mold, unhealthy organisms that grow in high moisture or water areas. If you suspect that mold is a problem in your home, find and fix leaky plumbing or other sources of water leakage.

If any part of your home becomes damaged with water, dry the area within 24 to 48 hours to prevent mold growth. Use fans, dehumidifier, or rags to help with drying. Mold can be washed off hard surfaces with borax (a mild cleansing agent) and water. Borax kills mold spores, while Clorox bleach kills only mold. Killing the spores helps to keep mold from re-growing.

Replace moldy areas that are harder to clean, such as ceiling tiles, carpets, and furniture upholstery.

Make sure your home has a source of fresh air to keep unnecessary moisture and hazardous mold out. Ceiling fans or portable room fans can help.

Make sure gutters are clear and downspouts drain away from the house, not towards basement or foundation.

Use the exhaust fans in kitchen and bathroom to get moist air out of the house.

To get more moisture out of the air, use your air conditioning or a dehumidifier on those extra-humid days. Empty the dehumidifier's water bucket frequently, to keep the unit running.

Squeegee shower walls after use, to keep tile cleaner and prevent mold growth.

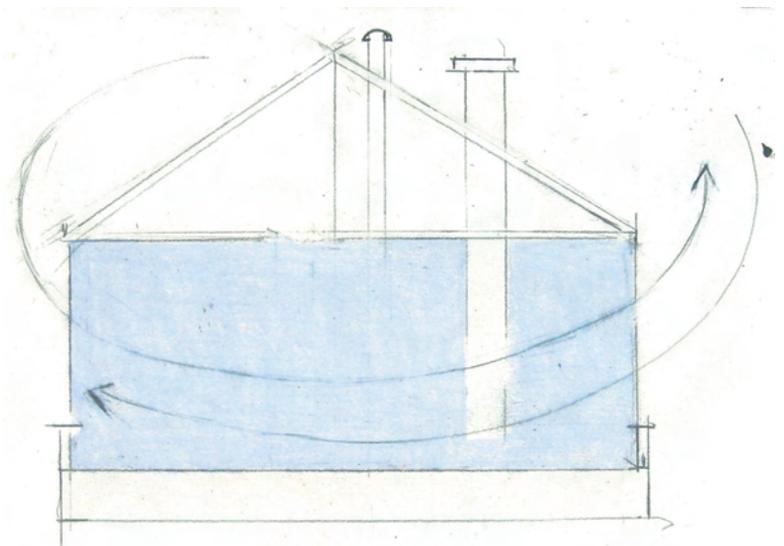
## Moisture Control / Ventilation

Moisture is one of the most menacing and least recognized indoor pollutants, affecting both human health and the health of the building. Our bodies come in contact with mold in three ways: by breathing mold spores that become airborne; by eating mold in food; and by touching mold on surfaces. Over 200 different types of indoor molds have been identified. They spread rapidly on almost any surface — food, tile, paint, dust, sheetrock, plaster, wood, and fabric such as clothing or furniture upholstery.

Anywhere moisture collects, mold, mildew, and dust mites can live, causing asthma or allergies, destroying wood products, and accelerating the rusting of metal building components. The first lesson in mold prevention is to think of your home as a lung, an organ that needs constant air circulation. Take advantage of drier days and open windows to allow air to circulate.

### Symptoms of Mold:

Breathing difficulties or shortness of breath  
Wheezing  
Sore throat  
Flu-like aches and pains  
Fatigue



# Healthy House

## Tips

Cleaning Products Recipes:

**Cleaning drains mix:** Baking soda, vinegar, and hot water

**Stains and mildew-** Borax, baking soda, hydrogen peroxide

**Most hard surfaces-** Dishwashing detergent, liquid castile soap, which is mild, 100% natural and biodegradable.

**All-Purpose-** 1 quart warm water, 1 teaspoon liquid castile soap, 1 teaspoon borax, 1/2 cup undiluted white vinegar, put in spray bottle and mix.

**Note :** You can add 10 to 15 drops of essential oil per 20 oz. cleaner mix for a nice fragrance. Lavender and lemon oils smell wonderfully clean. Tea tree oil is a natural anti-bacterial. These are available at natural food stores.

### Recipe for natural odor eater-

Fill recycled spray bottle with white distilled vinegar add 20-30 drops of essential oil (peppermint) and shake.

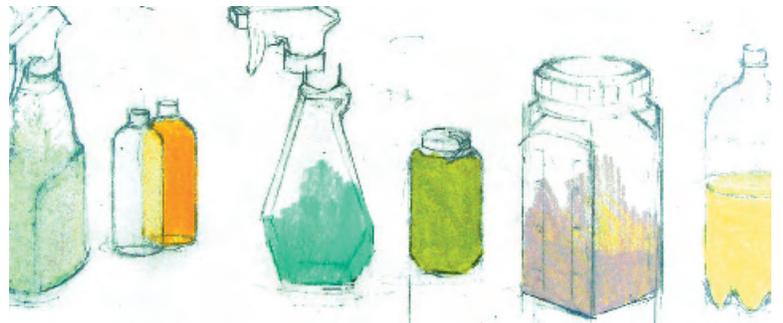
**Note :** vinegar is a mild eye irritant so spray away from face. Use anywhere: kitchen, bathroom, etc.

Avoid re-using spray bottles that contained store-bought, potentially toxic, cleaners. The harsh chemicals in these cleaners leach into the plastic of the bottle, and could contaminate your homemade cleaners. Try a recycled water bottle.

## Unhealthy Indoor Air: Cleaning Products

Start here because it's the most accessible and easiest way to reduce toxins, help improve the environment, and save money.

Everyone knows that cleaning your home is important because it helps remove harmful contaminants such as mold and bacteria. However many conventional cleaning products contain toxic chemicals that can cause health problems. These products can cause chemical sensitivities or weaken the immune system, causing headaches, dizziness, eye, skin, and respiratory irritation, and asthma. Some even contain cancer-causing substances, reproductive toxins, central nervous system toxins and endocrine system/hormone disruptors. Fortunately, many alternative, nontoxic cleaning products are now available. Better yet, you can make your own cleaners from commonly-available, cheap ingredients, for example:



### Shopping List for Homemade Cleaners

Baking Soda,  
White Vinegar  
Liquid Castile Soap  
Lemon juice, salt,  
Hydrogen Peroxide  
Borax  
Recycled spray bottle to mix and store

**Note :** borax and baking soda are especially versatile household products.

# Healthy House

## Tips

To clean and disinfect your sponges, put them in the dishwasher, laundry, or microwave instead of throwing away. Save your old sponges for cleaning the bathroom or your car.

Reduce the number of dust-collecting houseplants, books, knickknacks, and non-washable stuffed animals in your home.

Filter your water -- remove chlorine, dirt, chemicals, bugs, and other pollutants. Check Resource section for available filters.

Install smoke and CO detectors/alarms.

Set out a small uncovered container of baking soda mixed with 5 to 10 drops of essential oils for a great bathroom deodorizer.

## Unhealthy Indoor Air: Other Causes

Just like your cleaning products, there are other culprits of toxins in your home that can leak into the air.

**Air fresheners-** Contrary to what advertisers tell us, "clean" does not have a "scent." Simply open a window. Most fresheners contain formaldehyde and a dozen other chemicals, that can actually deaden your sense of smell and produce an allergic reaction.

**Dust-** Bacteria can live in dust which creates another way for it to get into your lungs.

**Carpet-** This is the biggest collector of dust. Avoid getting carpet or clean often. Use washable throw rugs on tile or hardwood floors, and wash rugs in hot water often.

**Pest Control-** Commercial insecticides contain many harmful ingredients that kill pests, but you don't want them harming you at the same time. For most insects, simple soap in a spray bottle will stop them dead in their tracks. Another option is to add petroleum jelly to a little food bait such as bread, or fruit and feed to roaches.

**Note :** See Lawn/Food section for more info.

**Heating and cooling equipment-** Filters collect much debris and dust, and should be replaced twice a year. Get maintenance checks done before heating season and before summer cooling season to check electrical connections, coolant, and ductwork.

**Note :** Check appliance page in the Energy section for more tips.

**Paint-** You know the smell of paint? Perhaps you've experienced dizziness or noticed a rise in temperature while painting. It has that smell because it is releasing chemicals in a process of drying called "off-gassing." Offgassing is like evaporation, only with solid materials.

This happens because even the densest solid materials aren't really solid. There are spaces between the molecules. And molecules work their way into the atmosphere, just like they do in evaporation. Paints off-gas because they contain substances called "volatile organic compounds" or VOC's. VOC's include a variety of chemicals, some of which may have short and long-term adverse health effects with levels considerably higher indoors than outdoors. Look for low- or zero- VOC paint now available in stores.



# Saving Water

## This Section Will Cover

Low-Flow Appliances

Reduce Heat Loss/Water-Heaters

How to Save on Lawn Care

How to Make a Rainbarrel

**Note** : Check Resource section for how to find things mentioned in this chapter.

No matter how much water you use, there are many ways to cut unnecessary use that could save you money. Of all the water in the world, only 3 percent is fresh. Less than one third of 1 percent of this fresh water is available for human use. The rest is frozen in glaciers or polar ice caps, or is deep within the earth, beyond our reach. Imagine that 100 liters represents the world's water, about half a tablespoon of that is fresh and available for our use.

Saving water also lightens the load of your city's waste treatment plant. Treatment plants have to treat millions of gallons of waste water a day before it can be released back into the ecosystem, requiring a network of energy guzzlers paid courtesy of you, the tax payer. Economic and environmental concerns about water are challenging virtually every community across North America. Remember, every drop counts.

Average water use in your home:

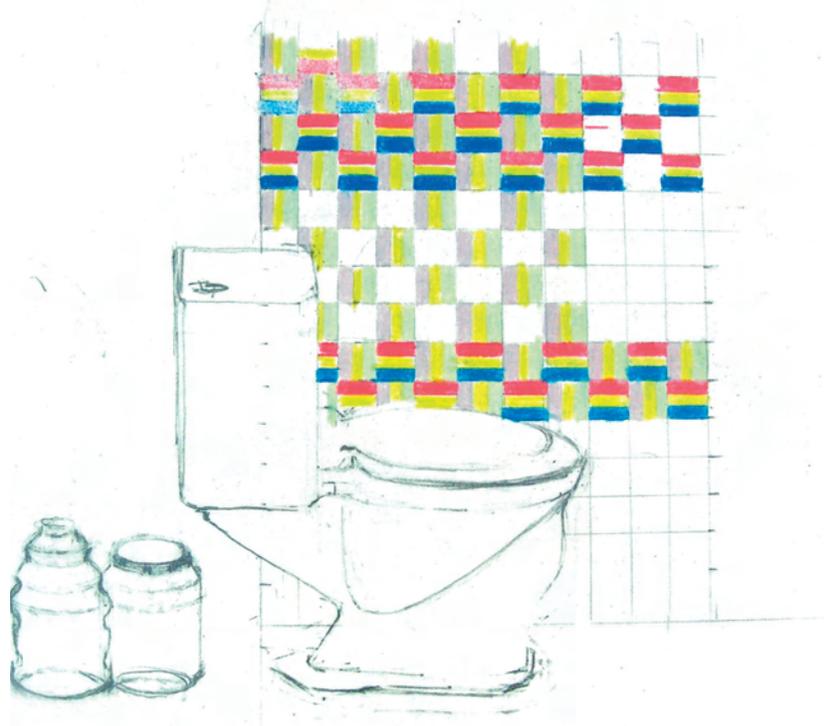
Bathroom 40%

Kitchen 20%

Laundry 15 to 20%

Other (car wash, drinking, lawn)20%

There are a host of ways to trim the amount of water you use simply by making slight adjustments to each of these areas of your home.



# Saving Water

## Tips

Use the 5-minute shower rule. If you need support in this practice, shower-timers are available from \$4-\$150.

Use a waterless car wash product, like EcoTouch or Freedom.

Use a commercial car wash that recycles its wash water.

Look into green roofs (Check resource page for more detail)

## Low-Flow Fixtures

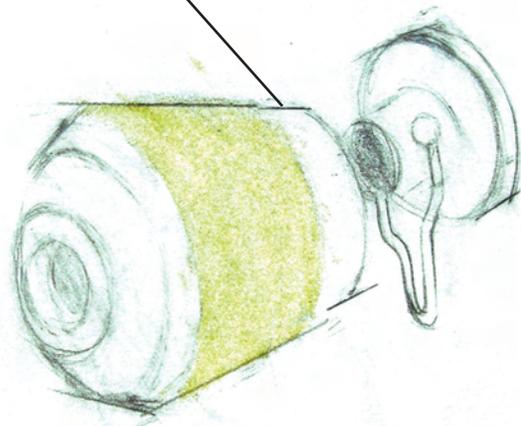
Check for leaks anywhere in the home. Surprisingly, a drippy faucet wastes a large amount of water, as much as 2,700 gallons a year from one faucet!

Make a water-saving toilet. If your toilet is older than 10 years, that probably means it's flushing about 2 to 2.5 gallons per flush. You can save over half that amount by filling two empty mayonnaise jars with water, screwing the top on and placing in the tank. This displaces water, saving you thousands of gallons a year without compromising your flushing power.

Install low-flow faucet aerators to reduce water flow. They are inexpensive, screw in, and save gallons of water.

### Low-Flow Faucet

Aerator Filter



# Saving Water

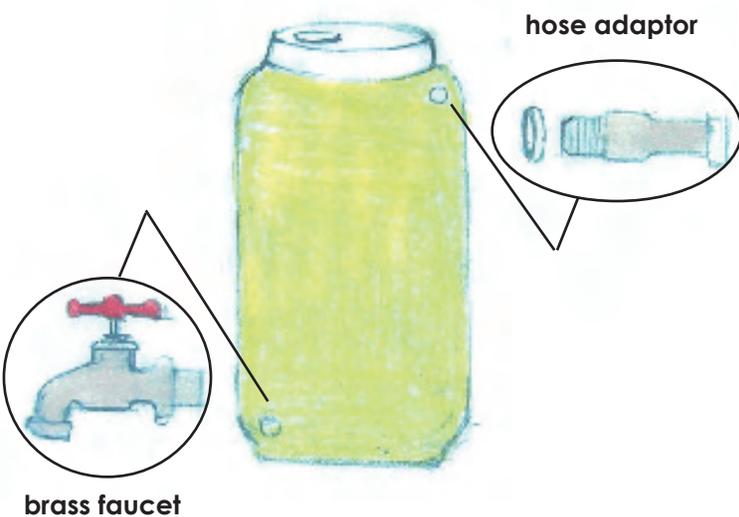
## Tips

We recommend using a 25-foot garden hose and a 33 to 36 inch watering wand. Stay away from light-duty hoses, or any hose that kinks.

You can use either a plain, single faucet or a splitter, which has two outlets instead of one. A splitter is useful when you want to fill a watering pail without having to disconnect your garden hose.

If your gutter doesn't have gutter guards to keep leaves and debris out, we recommend using an inexpensive downspout screen.

Rainbarrel w/ detachable lid



## Rainbarrels

A rain barrel collects and stores rainwater from your rooftop to use later for things like lawn, garden watering or to wash your car. They are inexpensive and easy to build. Water collected in a rain barrel would normally flow through your downspout, onto a paved surface, and eventually into a storm drain. Rainbarrels help lower water costs by saving approximately 1,300 gallons of water during the peak summer months. Rain water is usually soft and free of dissolved minerals which is great for your indoor plants, your garden and lawn, or washing your car. Saving a little water each time it rains can also greatly reduce the problem of overflow to your local waste treatment plant.

Rooftops are impervious surfaces and like roads, parking lots, driveways and even compacted soils, water can not be absorbed by the surface. In pristine areas, even an additional 10% of impervious area alters the natural rainfall runoff cycle and has the potential to damage sensitive ecosystems. Infiltration -- allowing the water to soak into nearby soils -- will recharge groundwater supplies and return the water cycle to a more natural path.

You can find all the supplies make your own water saving rain barrel at your nearest home improvement store. The cost will be around \$20.

### Tools List

- Drill
- 6" Hole Saw (a saber saw, a keyhole saw, or a drywall saw will also work)
- 29/32" Drill Bit
- 3/4" Pipe Tap

### Materials List

- Barrel w/ detachable lid
- Louvered Screen
- 3/4" Brass Faucet
- Teflon Tape or All Purpose Caulk
- 3/4" Hose Adapter

# Saving Water

## Tips

Do not use collected water for drinking, cooking or bathing.

Keep the rain barrel lid secure so children or animals cannot fall inside.

Disconnect the barrel during the winter to avoid constant overflow during the rainiest months. Attach it in the early spring to fill it for use.

Most recycled barrels need to be cleaned before first use.

If a moss killer has been used on the roof, let a couple of rainfall events go by before collecting the roof runoff.

Elevate your rain barrel slightly to make access to the spigot easier.

The screened louver vent will prevent mosquitoes from breeding in your barrel.

Consider joining multiple barrels for additional capacity!

## 3 Easy Steps to make a Rainbarrel

### Step 1

Use a 6" hole saw, a saber saw, a keyhole saw or a dry-wall saw to cut a perfectly round 6" hole on the top of your barrel.

Drill two holes with a 29/32" drill bit, one towards the top for an overflow and one towards the bottom of the barrel for the faucet.

Next use a 3/4" NPT pipe tap and twist it into the upper 29/32" hole, then untwist the tap and back it out of the hole, then repeat the same process for the lower 29/32" hole.

Rinse your barrel out thoroughly, as it previously had a food product in it. Avoid using bleach, as it is environmentally harmful in the storm drains. For an environmentally safe soap solution use 2 teaspoons of castile soap and 2 teaspoons of vinegar or lemon juice for every gallon of water used to clean your barrel.

### Step 2

Twist in the threaded side of the hose adapter into the 3/4" threaded hole towards the top of the barrel.

Prepare the threaded side of the brass faucet by:

A) Wrapping it tightly with teflon tape, make four or five rotations until all the threads are covered; or

B) Applying a thin ribbon of Kitchen and Bath All Purpose Adhesive Caulk, or similar sealant.

Twist in the threaded and now prepared end of the faucet into the 3/4" threaded hole towards the bottom of the barrel.

### Step 3

Cover the 6" hole in the top by placing the 6" louvered screen onto the barrel with the louvered side up and the screen side down.

Slide a hose onto the hose adapter at the top of barrel to direct the overflow water away from your home.

Place two cinder blocks under the selected downspout and place the barrel on this raised base.

Cut your downspout about 4" above the top of the barrel, add an elbow, and make any final adjustments to the base and barrel.

Add a hose on the faucet or keep it available to fill a watering can.

Enjoy your rainbarrel!

# Waste / Recycling

## This Section Will Cover

How to Reduce Waste

What Can Be Recycled

What Can't Be Recycled

Hazardous Material Disposal

Composting

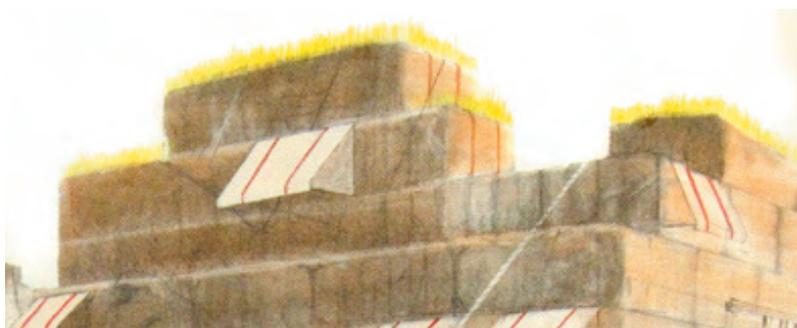
Tips

**Note** : Check Resource section for how to find things mentioned in this chapter.

Recycling saves natural resources and conserves land by reducing the need for landfills or incinerators and by reducing the need to drill for oil and dig for minerals. It also takes less energy to make recycled products. For example, recycled aluminum takes 95 percent less energy to make than new aluminum.

Every ton of paper recycled saves:  
60 percent on energy,  
17 trees,  
7,000 gallons of water, and  
60 pounds of air pollution.

In most cases, making products from recycled materials creates less air and water pollution than making products from virgin material. The recycling process creates far more jobs than landfills or incinerators, and recycling can frequently be the least expensive waste management method for cities and towns.



# Waste / Recycling

## Tips

Bring canvas or cloth bags when you shop. The US goes through 100 billion shopping bags annually. Plastic bags clog waterways and harm trees.

Use cloth towels and napkins instead of paper.

Put paper towels out of easy reach so they will be used only when needed.

Use old t-shirts as cleaning rags, cut into squares. When soiled just throw in with the wash.

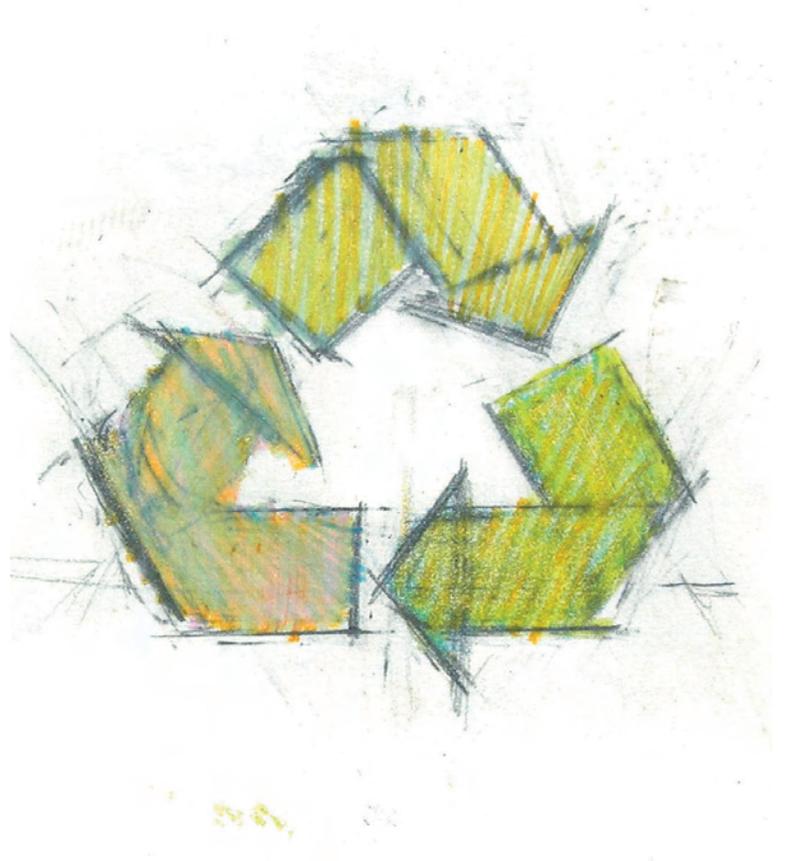
Buy concentrated products to reduce packaging. If your favorite brands have excessive packaging, contact the manufacturers and express your concern about reducing waste and conserving natural resources.

Avoid carry-out foods. It costs more than cooking at home and the containers produce a lot of waste. If you eat out, reuse containers as extra food storage.

Stop that annoying junk mail.  
[www.stopjunkmail.org](http://www.stopjunkmail.org) or 1.887.STOPWASTE  
Or see the Composting section of this manual.

## Waste Reduction

There a number of things you can do on a small scale that can make a huge difference in limiting unnecessary waste. All the products you buy, or at least their packaging or containers, will eventually require disposal and we are running toward a nation wide crisis of where to put the things we throw away. Packaging now accounts for 64 million tons by weight or 33 percent of all the U.S.'s garbage. The average person disposes of about 4.5 pounds of trash every day. If each person reduced waste by only one pound each week, the amount of reduction state-wide would total 312,000 tons a year.



# Waste / Recycling

## Tips

Rinse things well, to avoid attracting insects

Be aware of things you can and can not recycle

Buy larger sizes of items like soda, soup, cereal, etc. This is generally cheaper than smaller sizes, and creates less waste.

Did you know?

In 2006 the amount of plastic bottles recycled reached a record high of 2,220,000 pounds. All plastic bottles were recycled at a rate of 24% in 2005.

Plastics code 3 through 7 carry a risk of leaching Bisphenol A monomer, which has a low acute toxicity to humans.



## Recycling In Your Area

**Recyclable Material** taken in most jurisdictions

**Paper-** all types:

Newsprint

Cardboard (unwaxed),

Paperboard (e.g. cereal boxes without the lining bag)

Office paper

Egg cartons

Phonebooks

Wrapping paper

**Aluminum** cans and foil

**Glass bottles**

**Plastic bottles**, jugs, and containers

**Note :** check the number on the bottom, which indicates the type of plastic that is used for that particular bottle. The numbers are useful when sorting collected bottles so that they recycle better.

 **1** PET (polyethylene terephthalate) Soda bottles, water bottles, vinegar bottles, medicine containers, backing for photography film

 **2** HDPE (high-density polyethylene) laundry/dish detergent, fabric softeners, bleach, milk, shampoo, conditioner, motor oil. Newer bullet proof vests, various toys

 **3** PVC (polyvinyl chloride) Pipes, shower curtains, meat wraps, cooking oil bottles, baby bottle nipples, shrink wrap, clear medical tubing, vinyl dashboards and seat covers, coffee containers

 **4** LDPE (low-density polyethylene) Wrapping films, grocery bags, sandwich bags

 **5** PP (polypropylene) Tupperware®, syrup bottles, yogurt tubs, diapers, outdoor carpet

 **6** PS/PS-E (polystyrene / expanded polystyrene) Coffee cups, disposable cutlery and cups (clear and colored), bakery shells, meat trays, "cheap" hubcaps, packing peanuts, styrofoam insulation

 **7** OTHER, The scrapple of plastics! Products labeled as "other" are made of any combination of 1-6 or another

**Plastic** tubs and lids (check the number on these, too; some places only accept 2, 4 and 5)

**Spray cans** (empty)

**Tin** (steel) cans

# Waste / Recycling

## Tips

Many of the items listed can now be recycled or salvaged.

**Note :** Many communities have organizations that salvage and recycle building material. Check online or send us an email and we'll help you find them.

Avoid buying items that are packaged in non-recyclable materials. Instead of juice boxes, buy juice in bulk and send it to school in a sports bottle (preferably one that doesn't contain Bisphenol A).

## Not Recyclable

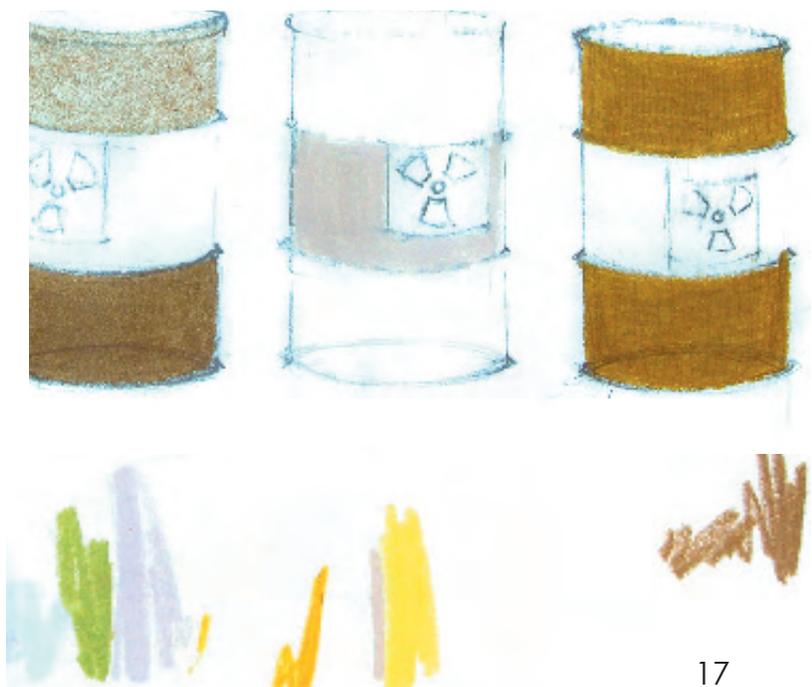
Juice boxes  
Light bulbs  
Plastic bags (however, your local supermarket may have a recycle area by the store entrance)  
Styrofoam  
Ceramic dishes  
Coat hangers  
Waxed cardboard  
Mirrors and window glass

## Hazardous Materials

Hazardous waste material cannot be thrown in the garbage. They must be dropped off at the appropriate city facility for safe disposal or recycling so that they don't contaminate the community's air, water, soil and you.

Some hazardous materials include:

Chemical cleaning supplies  
Batteries (all types)  
Fluorescent lamps/light bulbs  
Paint, paint thinners, primers, stains and other finishes  
Toxic glues and adhesives  
Medical/biohazard waste (including needles)  
Pesticides, herbicides, chemical fertilizer  
Computers, TVs, and other electronic equipment  
Printer/copier ink/toner  
Used motor oil  
Compressed gases



# Waste / Recycling

## Tips

Instead of using store bought fertilizers, compost your waste and use as fertilizer.

What can be composted-veggies, fruit, bread, cardboard, paper, grass clippings, junk mail, any paper product that doesn't use chemical inks for printing.

What should be avoided- greasy foods, cheese and meats- things that attract rodents or other animals

## Composting

Composting is an ideal form of recycling and returns much needed nutrients to the soil. On average people in the U.S. throw away 10% of food brought into the home. If we can't eat it there are animals and organisms out there, like worms and ants, that will. These scavengers thrive on food scraps. Composting requires a change in how we throw things away. Our current method of disposal usually involves clumping together food with everything else we throw away, all in the same trash can. By separating out food just like the bottles and cans we recycle, we will greatly minimize the production of methane (a green house gas) which is released into the air from decomposing organisms in our landfills. All we need to do is put it in the right place.

Around the country, landfills are growing to capacity, garbage incineration is becoming increasingly unpopular, and other waste disposal options are becoming ever harder to find. We can't just stick to recycling bottles and cans anymore. If you don't like the idea of being up close and personal with the decomposition cycle, there are composting treatment plants but, unfortunately, there are only a handful of places in the U.S. beginning to think about implementation. One example is the San Francisco's 3- Cart Recycling Program offered through Norcal Waste Systems. Residents are provided three different bins, one of which is for storing organic waste. This compostable material is collected daily and taken to a processing plant.

On the other hand why give away a valuable fertilizer that you could use in your own gardening, landscaping or houseplant needs? It just takes a slight change in perspective. Waste should be considered a valuable resource not a threat.

### Do-It-Yourself Composting Bin: What You Need

1. Two 8-10 gallon plastic storage boxes (dark, not see-through). Target, Walmart, and similar store sell ideal Rubbermaid containers with lids.
2. A drill with 1/4" and 1/16" bits
3. Shredded newspaper (for bedding)
4. A pound of redworms. You can order these online, buy them from your local bait shop, or gather them from your yard (more on that below).

### What can be composted

veggies  
fruit  
bread  
cardboard  
paper  
grass clippings

# Waste / Recycling



## How to build your composting bin, Part 1:

Drill about 20 evenly spaced 1/4-inch holes in the bottom of each bin. These holes will provide drainage and allow the worms to crawl into the second bin when you are ready to harvest the castings.

Drill ventilation holes about 1 to 1.5 inches apart on each side of the bin near the top edge using the 1/16-inch bit. Also drill about 30 small holes in the top of one of the lids.

Prepare bedding for the worms by shredding newspaper into 1-inch strips. Worms need bedding that is moist but not soggy. Moisten the newspaper by soaking it in water and then squeezing out the excess water. Cover the bottom of the bin with 3-4 inches of moist newspaper, fluffed up. Old leaves or leaf litter can also be added. Throw in a handful of dirt for "grit" to help the worms digest their food.

## Composting

### How to build your composting bin, Part 2:

Add your worms to the bedding. To gather redworms yourself (for free!), simply put out a large piece of wet cardboard on your lawn or garden at night. The redworms live in the top three inches of organic material, and like to come up and feast on the wet cardboard! Lift the cardboard to gather the worms.

Now for the math: if your food waste averages 1/2 lb. per day, you will need 1 lb. of worms or a 2:1 ratio. There are roughly 500 worms in one pound. If you start out with less than one pound, don't worry because they multiply quickly. To control your worm population, simply adjust the amount that you feed them.

Cut a piece of cardboard to fit over the bedding, and get it wet. Then cover the bedding with the cardboard. Worms love cardboard, and it breaks down within months.

Place your bin outside in a shaded area. Compost will produce heat naturally, and you don't want it to over heat by sitting in the sun. Keep the compost bin away from any potential wildlife, vermin or stray animals. A back porch is ideal. Another option is to place the bin on top of blocks or bricks or upside down plastic containers to allow for drainage. You can use the lid of the second bin as a tray to catch any moisture that may drain from the bin. This "worm tea" is a great liquid fertilizer.

Feed your worms slowly at first. As the worms multiply, you can begin to add more food. Gently bury the food in a different section of the bin each week, under the cardboard. The worms will follow the food scraps around the bin. Burying the food scraps will also help to keep fruit flies away. What do worms like to eat? Feed your worms a vegetarian diet. Most things that would normally go down the garbage disposal can go into your worm bin. You will notice that some foods will be eaten faster than others. Worms have their preferences just like us.

(Steps courtesy of Whatcom County website)

**Note:** Check Resource page for instructional videos

# Lawn / Food

## This Section Will Cover

Non-Toxic Fertilizers

Organic Pest Control

Native Plants

Garden

Tips



Plant communities, along with soils and appropriate water regimes, are essential components of healthy wetland systems yet the loss of them continue to be an issue of major concern. Wetland loss is caused by several interacting factors, both natural and human-induced (e.g., erosion and saltwater intrusion from the construction of canals and levees). In an attempt to slow the rate of loss and perhaps halt the overall trend, resource managers have applied various techniques to restore damaged or degraded habitats to functioning wetland systems.

As a home owner or tenant, you can do your part to help prevent erosion and maintain a healthy ecosystem with the use of your rainbarrel, composting and in this section growing native plants, a fruit or vegetable garden and a few good lawn care habits.

## Fertilizers

Fertilizers nourish soils, fortifying plants so they can withstand insects and disease. Their nitrogen content makes lawns green and lush, and promotes flowering and growth. Note: Synthetic or chemical fertilizers used by commercial farmers and home gardeners are different and are extremely detrimental to the environment. These chemical fertilizers contain contaminants such as dioxin and heavy metals. Toxins are absorbed by plants and vegetables and impact the long-term quality of soil. Using organic non-toxic fertilizers will help control pests while keeping other helpful insects and worms cultivate healthy soil.

When mowing your lawn, avoid collecting clippings in a bag. Left scattered on the ground, they will quickly break down and act as natural fertilizer. If you don't like the sight of scattered clippings, cut grass often enough so that you only have to cut an inch or two at a time. If this becomes too time consuming, gather clippings and use in compost or store in biodegradable bags.

**Note :** Check Resource section for how to find things mentioned in this chapter.

# Lawn / Food

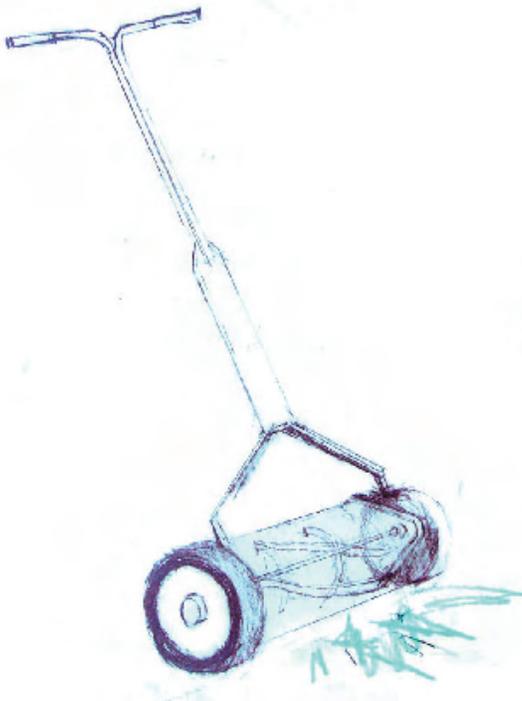
## Tips

Use organic fertilizers like Dynamic Lifter- includes manure, Power Pellets- made from plant material

Use manual mower like your Grandpa did. It's good exercise and makes a pleasant, summertime sound.

When using Natural Insecticide or fertilizer recipes, always test each blend on the lower leaves of plants and wait a few days to make sure that that particular plant will not sustain leaf damage.

Good organic fertilizers that can be found in stores contain bone meal, fish emulsion, and manure. Yummy!



## Fertilizers/Pests: A Natural Solution

### Weed Control

Pulling weeds is your best bet but sometimes this doesn't always work.

*Vinegar* - Spray full strength directly on weeds, preferably on a sunny day.

*Smother* -Cover weeds with newspaper (at least 4 pages thick) or cardboard which will degrade naturally and provide organic material. For a more aesthetic appearance, cover the paper with mulch or bark.

*Burn* -Pour boiling water on the weeds.

Some weeds are even edible. Check resource page.

### Fungus Control

Milk can control powdery mildew and black spots (often found on roses). Mix 1 part milk to 9 parts water and apply three times every 5 days with spray bottle.

### Garden Pests

Mix a few drops of liquid detergent (preferably vegetable or castile based), a couple of hot peppers, and 1 finely chopped garlic clove with water in a handheld spray bottle. Spray directly at infested areas.

Use a blender to puree equal parts hot peppers, white onions and garlic. (Be careful handling peppers, protect your eyes, and avoid breathing the puree.) Add 3 cups of water to the mixture and soak overnight in a covered bowl. Strain and add enough water to the liquid solution to make 1 gallon. Spray solution on infested areas.

Mix 1 cup of vegetable oil with 1 tablespoon liquid dishwashing soap. Add 1 1/2 teaspoons for every cup of warm water to a handheld spray bottle or add entire mixture to a 1 gallon garden sprayer and fill with water. Spray entire plant, including the undersides of leaves

Chop 10 - 15 garlic cloves into small pieces to soak in 1 pint mineral oil overnight. Strain and add 1 pint water and small amount (less than 1/2 ounce) liquid soap (preferably vegetable or castile based). Spray oil mixture directly on infestations.

# Lawn / Food

## Tips

Sprinklers waste water through evaporation, inefficient distribution, and not soaking into soil. A soaker hose (drip irrigation) on a timer is a better solution. You can also use a kitchen timer.

Water plants during cooler times of the day, which gives the water a chance to permeate the soil and be absorbed by roots.

Whenever possible grass lawns should be replaced with native plants, edibles or non-invasives.



## Native Plants/Gardening

### Native Plants

A grass lawn will need 35 inches of water a year. Native plants reduce irrigation and maintenance, saving time and water. They are adapted to their surrounding and therefore require little to no hazardous fertilizers or chemicals. Native plants attract necessary birds and insects which provide a natural pest control. They also help expell water when not needed and retain water when needed.

### Growing a Veggies or Fruit Garden

The continued use of massive quantities of petroleum, both on the production of synthetic fertilizers and machinery used in food production and in transporting our food across the globe, is clearly unsustainable. According to Sustainable Agriculture, fresh food is hauled an average of 1500 to 2500 miles from farm to table which is 25 percent farther than in 1980. In some parts of the nation, romaine lettuce typically travels 2055 miles from farm to store; 1788 miles for celery; 1675 miles for onions; and 1369 miles for tomatoes. This is just a small indication of our current problem. It doesn't account for all the produce grown outside the country and things that we eat out of season.

Local food systems can reduce "food miles" and transportation costs, passing a significant energy savings on to you. Consumers also benefit from fresher, better-tasting, and more nutritious food, while more food dollars stay within rural communities.

# Resources

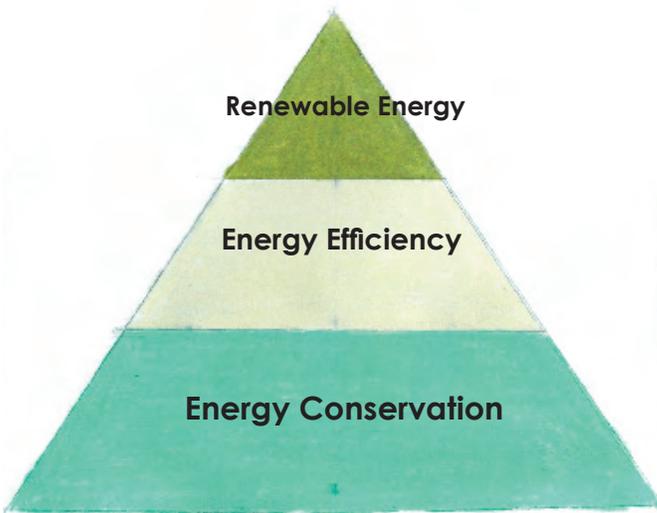
## This Section Will Cover

Who to Call for Repairs

Where to Find Products

Local Farmer's Markets

Local Green Organizations



We hope this home manual will serve you well in providing information and a growing perspective on the state of our world. With simple steps, we can all do our part.

Below you will find where to buy things mentioned in this manual and a host of websites to help further your search for a cleaner, greener tomorrow.

### Who to call if something breaks

The landlord or appropriate service person should be your first call for anything that is unsafe, wasteful (like a leaky faucet), or broken. In order to maintain a safe, clean house, when things are not working properly. In some cases, the landlord may provide contact information for repair people (below).

Landlord # \_\_\_\_\_

Plumbing repairs # \_\_\_\_\_

Electrical repairs # \_\_\_\_\_

HVAC equipment repairs or service # \_\_\_\_\_

Appliances service # \_\_\_\_\_

Notes:

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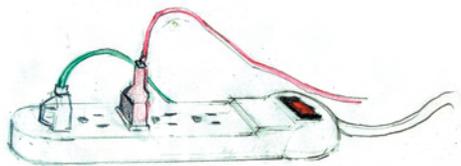
# Resources

Most things mentioned on the page can now be found at big-box stores like Home Depot, Walmart and Target but we suggest finding local resources within your community first. Support local economies.

## Saving Energy

Compact fluorescent light bulbs (CFL) and LED lights.

Smart Strips



Radiant Floor mats/ rug can be found online [www.cozywinters.com](http://www.cozywinters.com)

## Healthy House

Smoke alarms and CO alarms (which should already be in your house). Buy one for a friend or loved one.

Brita water filter pitchers or faucet filters can be purchased at Sears, Target, Bed Bath and Beyond, Linens and Things, and Walmart. They can also be ordered online from any of these stores, or from Amazon.com.

Low VOC paints, sealants, and construction adhesives.

Pre-made non-toxic cleaners, are available at Target and Walmart.

Walmart sells organic cotton sheets and T-shirts (look for organic on the tag or it isn't)

[http://www.kidshealth.org/parent/general/body/environment\\_control.html](http://www.kidshealth.org/parent/general/body/environment_control.html)

## Cleaning

<http://www.organicandnature.com/>

## Pest Control

It's difficult to find products in stores for natural or organic pest control. You can do a search online to find suppliers. There is also a very comprehensive website called Earth Easy that will explain how to make your own.

[http://www.eartheasy.com/live\\_natpest\\_control.htm](http://www.eartheasy.com/live_natpest_control.htm)

[http://www.terracecycle.net/worm\\_poop.htm](http://www.terracecycle.net/worm_poop.htm)

## Mold

<http://mailman.columbia.edu/ccceh/mold.html>

## Saving Water

Low-flow faucet aerators are available for purchase online from Amicus Green Building Center, [www.amicusgreen.com](http://www.amicusgreen.com)

Rainbarrels: [http://www.cwp.org/Community\\_Watersheds/brochure.pdf](http://www.cwp.org/Community_Watersheds/brochure.pdf)

Hoses, hose splitters, nozzles, gutter screens, and cinder blocks can be found at Home Depot.

## Waste & Recycling

Bring your own grocery bags. Click on the BYOB ad at [GoforChange.com](http://GoforChange.com) to find a great selection of canvas bags.

Many grocery stores have plastic bag collection bins in front of the store.

Walmart has a cell phone recycling program.

Walmart also sells recycled polyester T-shirts (look for it on the tag or it isn't).

Staples has a take back program for some products.

You can also buy recycled plastic cutlery at Walmart. Instead of throwing it away, you can wash it and get many uses from it.

Kushies cloth diapers –reusable Ultra Diapers with flushable biodegradable diaper liners, are at Walmart.

For recycling plastic bags go to: [www.plasticrecycling.org](http://www.plasticrecycling.org)

Great composting video: <http://www.goforchange.com/2009/03/03/watch-junk-mail-disappear-with-vericomposting/>

Building Materials Reuse

<http://www.goforchange.com/2008/02/15/the-loading-dock-inc/>

# Notes

