



**More than 35
Energy-Saving Tips**

sample

**Green Your Workouts
4 Ways Under \$30 to Save Power
Go Energy Efficient as a Renter**

welcome to
eco@homeTM
Winter 2011

We've called on you in the past to tell us how you save energy and water in your home, and we enjoyed hearing your real-life experiences. But now we want to see it. The next time you complete a project that helps save nonrenewable resources and money in your home, email us a picture. Then, check out the next issue of *eco@home*—you might see your photo in print.

By sharing your project, you help us understand what tips are important to you. That way, we include stories that are pertinent to you and your lifestyle. You also help other readers see how easy it is to implement water- and energy-saving home improvements in their homes. Not to mention, you encourage all of us to reduce our use of precious resources, while saving our environment and checkbooks.

You can start with the energy- and water-saving tips in this issue of *eco@home*. For example, apply the stripping around your windows, seal the door, take a picture, and email it to us. We'll include your photo, and improve the energy efficiency of your home. You can also switch to CFLs and save on electricity. It's that easy.

For each month, we'll feature one reader photo with a brief explanation of the project. In your email to us, be sure to explain the steps it took to complete the endeavor and any other pertinent information, such as the cost, difficulty level, and special considerations.

We look forward to seeing your green ideas soon. Happy reading!



we want to hear from you

The editors of *eco@home* want to show you how you save energy and reduce your environmental footprint. Send photos of your efficiency projects to ecoeditor@iamu.org with "My Projects" in the subject line. You might see your photo in an upcoming issue of the magazine.

ecofact

Colorfx, the printer of *eco@home*, is the only printer in Iowa that has achieved tri-certification in chain of custody, which validates that the paper *eco@home* is printed on comes from qualified, sustainably harvested forests. Colorfx is certified by the Forest Stewardship Council, the Sustainable Forestry Initiative, and the Program for the Endorsement of Forest Certification—leading national and global forest protection agencies. Through the Carbon Neutral Print Productions program, Colorfx also purchases carbon offsets for the printing of *eco@home*. In addition, *eco@home* is printed with soy inks.



Insulate Your Windows

Windows provide natural light and reduce your use of artificial lighting.

But significant heat escapes through them during cold months—accounting for as much as 25 percent of your heating bill, according to the U.S. Department of Energy. Here are a few ways to keep heat indoors this winter.

Apply weather stripping. Weather stripping is a narrow piece of metal, vinyl, or rubber that seals gaps between window frames and actual windows. Install your stripping on a clean and dry surface while the temperature is above 20°F. After application, your windows should seal tightly to keep heat from escaping.

Insulate with blackout curtains. Keep blackout curtains open until nightfall to let the sun warm your room, but at night, close them so they serve as a barrier in the opposite direction. According to the U.S. Department of Energy, closing curtains at night can reduce heat loss by up to 10 percent.

Use cellular blinds. Also known as honeycomb shades, these blinds are designed to keep small pockets of warm air trapped within cells, helping reduce a room's heat loss through windows. They come in both blackout and translucent options to fit your lighting needs.

Invest in storm windows. Available in a variety of styles, storm windows provide an extra layer of insulation to your existing windows. They're less expensive than replacing drafty windows, help stop the exchange of cold and warm air, and even block outside noises.

try this
today...

Insulate your water pipes with pre-slit foam pipe insulation sleeves. (You can find the sleeves at your local hardware store.) They'll keep your pipes warm and prevent them from freezing, cracking, or bursting this winter.

Cook Up Energy Savings

Sleek, energy-saving induction cooktops are quickly becoming a must-have kitchen appliance. Magnetic coils under each cooktop element transfer heat directly to your pots and pans. Because only your cookware is heated, the rest of your cooktop stays cool to the touch. This helps you avoid painful burns and prevents spilled food from sticking to the cooking surface.

It also means very little energy is wasted. In fact, induction cooking uses about 84 percent of the energy it produces, according to the U.S. Department of Energy. (Gas ranges use 50 percent, and electric ranges use 70 percent.) And many induction models boil water 50 percent faster than their gas or electric counterparts.

Expect to pay for these key features, though—induction cooktops cost from \$1,800 to more than \$4,000. And depending on what type of cookware you use, you may need to buy pots and pans. Induction heating elements are only compatible with magnetic cookware, such as pots and pans made of cast iron or stainless steel.

4 Energy-Saving Projects Under \$30

You don't have to spend a lot to save a lot. By shelling out less than 30 bucks, you can save energy and money. Try one—or all—of these easy and affordable home improvements today.

1. Replace your furnace filter monthly (\$10–\$17). Your furnace works harder to pass air through a dirty furnace filter than a clean one, meaning it uses more energy and costs more money. Replace your filter monthly for optimum efficiency, or buy a reusable filter that you can clean regularly.

2. Replace incandescent bulbs for CFLs (about \$2 for 2 bulbs). Using compact fluorescent (CFL) bulbs in place of old incandescent bulbs can reduce your home's lighting-energy use by 50 to 70 percent, according to the U.S. Department of Energy.

3. Wrap your water heater with a blanket (about \$20). Touch the outside of your hot water storage tank. If it feels warm, your tank may not be properly insulated and could benefit from an inexpensive insulating blanket. According to the U.S. Department of Energy, water heating accounts for about 12 percent of an average utility bill. Covering your tank can drop that amount by four to nine percent.

4. Plug in a “smart” power strip (about \$30). Leaving your appliances plugged into a conventional power strip or directly into the wall allows them to draw “phantom” power even if the appliance is off. A “smart” power strip completely cuts off energy to appliances when they're not in use.



A 25-watt CFL may be as bright as a 100-watt incandescent bulb, and it uses 75 percent less energy.

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Labeling Lightbulbs

In mid-2011, the Federal Trade Commission will roll out new labels for lightbulb packaging to help you decide between traditional incandescent bulbs, compact fluorescents (CFLs), and LED bulbs.

The labels will play up bulb brightness—measured in lumens—rather than wattage. Watt numbers have been on lightbulb packages for years, but they actually reflect energy use, not brightness, making it hard to compare bulbs. For example, a 25-watt CFL may be as bright as a 100-watt incandescent bulb, and it uses 75 percent less energy. The new labels on each lightbulb package will include a Lighting Facts label modeled after the Nutrition Facts label on food packages. The Lighting Facts label will list the bulb's brightness, wattage, energy cost, life expectancy, appearance (warm or cool), and mercury content.



try this today—

If you're heading out of town for a winter vacation, program your lights to come on at night and shut off before day. Outside, protect your home with motion-sensor landscape lights. Both tips save energy as they keep your home safe.

How to Hypermile

Driving a car with good gas mileage is the first step to conserving fuel. The next step: hypermiling—or maximizing gas mileage with driving techniques. Try these tips to get the most out of your next tank of gas.

Coast to a stop and accelerate smoothly. Slamming the brakes and revving the engine put major wear on your vehicle and reduce gas mileage significantly—by up to 33 percent at highway speeds and five percent around town, according to fuelconomy.gov.

Keep to the speed limit. Though optimum gas mileage varies from car to car, most cars decrease gas mileage at speeds greater than 60 mph. According to fuelconomy.gov, your car will save between seven and 23 percent on fuel consumption by driving at 50 mph.

Remove items from your trunk and take off roof racks. The extra weight hurts your gas mileage. According to fuelconomy.gov, your fuel economy decreases by up to two percent for every 100 pounds of excess weight.

Skip letting your car idle. It's tempting to start your car to warm up during winter months, but when you do, your car wastes gas and releases twice as many exhaust fumes as it does in motion. If you're stopped for more than 10 seconds, turn off your car to conserve fuel.

Pull through to park. Shifting from drive to reverse and back again eats up gas. Avoid parallel parking, and if you can, seek parking spots where you can pull through and avoid reversing.

Calculate Your Water Footprint

Between showering, teeth brushing, hand washing, and all of the other water-related activities you do daily, you may use more H₂O than you think. In fact, the average American uses 2,000 gallons of water a day, according to *National Geographic* magazine.

Even more surprising: Only five percent of the water you use daily flows through pipes in your home. The rest grows, is mined, and is used to produce everything you enjoy every day. (For example, the cup of coffee you drink requires 55 gallons of water—and most of that water is used to grow the beans.) The rest of the water goes toward items such as the gas you put in your car—13 gallons of water are needed to make one gallon of gas—and the electricity that flows through your house.

To see how you and your family stack up to the national average, visit environment.nationalgeographic.com and search for “water footprint calculator.” This interactive tool calculates your daily water use based on a variety of factors, such as what type of washing machine you use, the amount of milk you drink daily, and the number of flights you take yearly. You'll also discover other sneaky sources of water use and get tips for reducing your water footprint.

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Get the Spin on Today's Washers

If your household is like most, you probably put your clothes washer through the wringer every week. Though you may not be able to reduce your volume of laundry, you can reduce the expense of doing each load.

According to the U.S. Department of Energy, replacing a washer that's more than 10 years old with a new **ENERGY STAR**® unit will save you \$135 annually on utility bills and cut each load's water use by 50 percent. Here's what to know before you buy.

Separate the choices. Today's efficient washers include front-loaders and top-loaders. Front-loaders are more efficient but have longer wash cycles and higher price tags. Top-loaders have faster cycles but often lag in efficiency. Both offer fast spin cycles to extract excess water.

Read the labels. Washers that bear the **ENERGY STAR** label use 30 percent less energy than conventional

washers. Energy efficiency is listed as the Modified Energy Factor (MEF), and water usage as the Water Factor (WF). When shopping, look for units with high MEF and low WF ratings.

Size up the load. Washing full loads saves more than 3,400 gallons of water a year, according to **ENERGY STAR**. But many new washers now automatically adjust water levels to the size of the load, so running small loads is still efficient.

Check the features. Today's washers offer a wealth of options, such as a delay start option that lets you run a load at a later time and a quick-fill tub that lets you wash a small load in 30 minutes. Also look for the add-a-garment feature, which lets you stop a wash load at any time to add a sock or towel that you forgot.

As you shop, keep good value in mind. Consider which features you're willing to pay for and how long it will take you to recoup your investment in energy savings.

Photograph courtesy of Whirlpool Corporation®.

try this today...

Power down your computer when you're not using it. Turning a computer on and off uses less energy than leaving it on for an extended period—and it won't hurt your computer a bit.

Learn Energy Lingo

Saving energy is easier when you understand the language. Here's a glossary of common terms relating to electricity and energy usage.

Alternating current (AC): Electric current that changes direction at regular intervals. In the U.S., AC electricity alternates back and forth 50 or 60 times per second. This frequency is called 50 hertz (50Hz) or 60 hertz (60Hz). We commonly use AC electricity in our homes.

Ampere (amp): A unit of electric current. One amp is the amount of current that flows in a circuit when a force of one volt is applied across a resistance of one ohm.

British thermal unit (Btu): The amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit. One Btu equals 1,055 joules.

Compressor: The part of an air conditioner or refrigerator that pressurizes the refrigerant and enables it to flow through the system.

Condenser: The part of an air conditioner or heat pump that condenses the refrigerant from gas to liquid when it depressurizes or cools.

Direct current (DC): Electricity that flows in only one direction, as in batteries.

Fluorescent light: Light generated by using an electric charge to excite atoms in a glass tube.

Foot-candle: A measurement of illuminance equal to one lumen per square foot.

Gigawatt (GW): 1 billion watts, 1 million kilowatts, or 1,000 megawatts. Or the energy consumed by 10 million 100-watt light bulbs.

Hertz (Hz): A measurement of cycles or wavelengths of electrical energy per second. A standard U.S. electricity supply has a frequency of 60 hertz.

Illuminance: The amount of light on a surface, measured in foot-candles or lux.

Incandescent light: Light produced by heating a wire filament inside a gas-filled bulb.

Joule: A metric unit of energy or work, it's the energy produced by a force of one Newton operating through a distance of one meter.


Kilowatt (KW): 1,000 watts or the energy consumed at a rate of 1,000 joules per second.

Kilowatt-hour: Measure of electrical supply or consumption equaling 1,000 watts over the period of one hour. Equals 3,412 Btu. Utility bills are based on kilowatt-hours.

Light-emitting diode (LED): A semiconductor that gives off light when electrified. It's a highly efficient light source when used as a bulb.

Load*: The electrical power required to run a circuit, appliance, building, or an entire distribution system.

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A utility pole with electrical equipment against a blue sky. The pole is on the right side of the frame. At the top, there are two brown ceramic insulators. Below them, a white ceramic insulator is visible. At the bottom, there is a large white cylindrical component, possibly a capacitor or transformer, with some wiring. The background is a clear blue sky.

Lumen: A measure of light quantity or brightness based on the sensitivity of the human eye during the daytime.

Megawatt*: A standard measure of electric generating capacity, one megawatt equals 1,000 kilowatts or 1 million watts.

Ohm*: A measure of electrical resistance. One ohm of resistance causes a current of one amp to flow in a circuit in which one volt is applied.

Resistance: Measured in ohms, the degree to which a material opposes the flow of electric current and generates heat.

Semiconductor: A solid material that conducts electricity under certain conditions, such as high temperature, but not at others.

Therm*: A unit of heat equal to 100,000 British thermal units (Btus).

Volt*: A unit of electrical force. One volt causes a current of one amp to flow through a resistance of one ohm.

Watt: A product of voltage and current, it's the energy transferred when one amp flows at an electrical pressure of one volt. One watt equals 1/746 horsepower, or one joule per second.

* Defined by the U.S. Department of Energy.

Energy-Efficient Workouts

The good news: You're devoted to working out. **The bad news:** Your fitness routine may take a toll on the environment. For instance, a 30-minute treadmill run produces two pounds of carbon dioxide, and it uses 0.75 kilowatt-hours of energy—enough to keep your Christmas tree lit for six hours, according to TreeHugger.

Shed pounds and save the environment with these tips for exercising at home, outside, and the gym.

At home. You don't have to join a power-hungry gym or invest in pricey home workout equipment to get your fitness fix. By purchasing inexpensive, non-electrical exercise tools—a jump rope, stability ball, resistance tubing, and dumbbells—you can engage your muscles and improve your strength, balance, and flexibility.

Even better, pump up your favorite music on your iPod and break a sweat grooving to the beat. Do lunges, squats, and push-ups during commercial breaks. Find easy and inexpensive at-home workouts by visiting www.treehugger.com and fitnessmagazine.com.

Outside. When the weather allows, lace up your shoes and jog around the neighborhood or hop on your bike to blast calories and soak up fresh air. Look toward other outdoor activities for fitness, too. Shoveling snow, clearing gutters, and crossing off other chores from your to-do list help maintain your home and improve your fitness.

At the gym. Make trips to the gym more eco-friendly by finding a location close to home and participating in people-powered activities such as spinning or weight lifting. Turn off televisions and other devices when no one is using them, and you can also switch to a green fitness facility—one that uses energy-efficient lighting and machines and nontoxic cleaning supplies.

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Going Green as a Renter

Let me be honest—my husband and I don't pay for our water and energy use in our 700-square-foot apartment. My landlord picks up those bills, and I assume our rent covers the costs. Even though we don't see the financial benefit of conserving resources in our apartment, we still do our best to reign in our consumption.

And that's tough. Without full control of our space, we can't do many of the projects listed in *eco@home*. But here's what we do.

Switch to CFLs.

Replacing incandescent bulbs with CFLs is the easiest, most cost-effective issue of *eco@home*. In a national energy-saving survey, CFLs were significantly more popular than incandescent bulbs, saving me from flogging out the ladder to replace high bulbs every week.

Wash dishes efficiently.

Unfortunately, our apartment doesn't have a dishwasher—the most energy- and water-efficient way to wash dishes. So we fill up one side of our double-vessel sink with warm, soapy water for scrubbing and one side with cold water for rinsing. That way, we avoid running the tap.

Microwave food.

When we heat leftovers or boil water, we use the microwave. It cooks food faster and is more energy efficient than the stovetop, reducing cooking energy by as much as 80 percent, according to **ENERGY STAR®**.

Take five-minute showers.

By carefully monitoring the time we spend under the showerhead, we save 15 to 20 gallons of water per shower.

Turn down the heat.

Our apartment is heated by steam, which means we can't program our heat in the winter. Instead, we turn down the temperature on radiators when we're asleep or away, and we keep cozy blankets and sweatshirts at the ready.

Though we'd love to install a solar water heater, replace drafty windows, or even switch to a low-flow showerhead, we can't as renters. It's important, though, that we don't use those setbacks as excuses to forgo conservation efforts altogether. My husband and I aren't perfect examples of resource efficiency, but we try. And when we do own our own home, thanks to *eco@home*, we have plenty of ideas to amp up efficiency.

Randall Roberts is an editor and designer at Lexicon, a custom media firm in Des Moines, Iowa.

try this
today—

Close off infrequently used rooms by shutting doors and closing vents and usher heat into occupied spaces.

did you
know ...

An improperly installed heating, ventilation, and air conditioning (HVAC) system can reduce system efficiency by up to 30 percent. Check with a contractor to make sure yours is installed correctly.

Keep reading for more ways to save energy and water on this issue.

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RECYCLE. Please pass this along to a friend.