

EARTH GUARDIANS

HOME ENVIRONMENTAL AUDIT



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A Home Environmental Audit helps people understand **WHERE** and **WHEN** energy/electricity is being used or wasted at home. The audit suggests ways to reduce the use of electricity or use it more efficiently to protect the environment and save money.

Electricity in homes is mostly used for lighting, air conditioning/heating and electrical appliances like laundry machines, refrigerators and electronics. The biggest energy hogs are air conditioning units, old appliances like refrigerators that aren't Energy Star rated, and incandescent light bulbs. Air conditioners left running all day when no one is home are one of the worst energy drains on a home. Lights left on during the day or when no one is in the room are also an energy waste. Air leaks through holes, cracks, and windows waste energy on hot days cooling the outdoors, or on cold days, heating the outdoors.

Most of the electricity in the U.S. is generated by burning fossil fuels such as coal and natural gas, which are the main causes of climate change. By reducing electricity use, you are helping to slow down climate change and saving money.

A home environmental audit will help people understand how their personal habits may be wasting energy. A more thorough energy audit will also determine how people could save money in the long run by replacing inefficient appliances with more energy efficient ones by making improvements to the building structure, such as new windows, new heating and water heating systems, or better controls, such as thermostats.

You don't have to do this Audit alone! In fact, it is designed for you to do with your parent, guardian, or any adult in the household. Another fun way to work on this audit is to get a crew of youth together (or work with your existing local Earth Guardians Crew) and as a group go to each other's homes, one at a time, and do the audit together! There are many ways you can make this fun, engaging and group, oriented!



WATER

HOME ENVIRONMENTAL AUDIT

1) Do your sinks, cistern, or toilets leak?

1) Tip: Check each sink and toilet in your home for leaks. Leaky ones waste water. Leaky hot water faucets waste both water and energy. If you find a leak, let an adult know. They are usually pretty easy and inexpensive to fix.

2) What type of flush system do your toilets have?




2) Tip: Single flush systems use much more water than dual flush systems. You can also look into how to modify your current system in various ways. Additionally, putting a brick in the toilet tank makes the toilet use less water. As less water fills in the tank then it reduces the water used for each flush. This is a easy home remedy!

3) Do you have low-flow showerheads in your home?

3) Tip: Low-flow shower heads reduce the amount of water one uses when taking a shower.

4) Does your home have a ventilation fan in the bathroom?

4) Tip: Turn on the ventilation fan in your bathroom when showering in order to prevent water damage to your home. Also make sure it is turned off whenever people are not bathing.





HOME ENVIRONMENTAL AUDIT

5) What is your tap water flow rate?

5) Tip: Flow rates on taps can be checked by measuring how many liters of water flow out in one minute with the tap on full. AAA+ rated aerators or washers can be used to reduce flow rates. 9 liters or less per minute is very efficient. 15 liters or more per minute is an energy and water hog!

6) How long do you take in the shower?

6) Tip: Taking a shower under three minutes long is very energy efficient. Taking showers up to 8 minutes take more water and more energy to heat the water. Baths take much more water and energy than even a long shower.

7) How do you wash your car?

7) Tip: Wash your car less frequently and use a car wash. Typically, the water at a car wash is recycled. If washing your car at home, use a bucket and soapy water or a hose that has a nozzle! A hose without a nozzle will be the least water and energy efficient.

8) Do you have a swimming pool?

8) Tip: Swimming pools are big water users. If you do have a swimming pool, use a solar blanket to keep the heat in. Make sure you don't have any leaks in your pool. Using a solar cover saves water by preventing it from evaporating out of the pool at the same time as keeping the pool a comfortable temperature.

9) Do you use mulch on your garden?

9) Tip: Using mulch on your garden beds helps to hold the water in the soil and prevents it from evaporating so you need to water less often.

10) What time of the day do you water your garden?

10) Tip: Watering your garden during the cooler times of the day (such as early morning or evening) greatly reduces the amount of water lost to evaporation. Use a timer on your sprinkler and make sure to water at the best times of day. Also, if watering by hand, be sure to use a hose with a nozzle that evenly distributes the water among plants.



HOME TEMPERATURE

HOME ENVIRONMENTAL AUDIT



Heating and cooling account for about 56% of the energy used in a typical U.S. home, making it the largest energy expense for most homes. Many heating and cooling systems have certain supporting equipment in common, such as thermostats and ducts, which provide opportunities for saving energy.

Have an adult inspect the heating and cooling equipment annually, or as recommended by the manufacturer. If the unit is more than 50 years old, you should consider replacing your system with one of the newer, energy-efficient units. A new unit would greatly reduce your energy consumption, especially if the existing equipment is in poor condition.



11) Check the temperature settings on your home's thermostat:

12) If your home has a fireplace, is the flue closed?

13) How often were your furnace filters cleaned or changed in the last year?

11) Tip: In the winter, thermostats should be kept low - in the 68° to 70°F range or lower. In the summer, they should be kept as high as is comfortable, in the 78° to 80°F range.

A programmable thermostat can help you reduce your heating and cooling bills by as much as 10% a year.

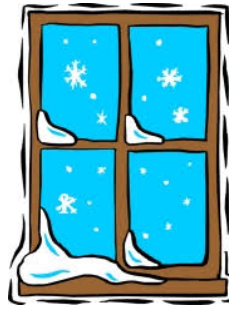
12) Tip: If your home has a fireplace, when there is no fire burning, check to see if the flue is closed. An open flue lets your indoor air escape up the chimney.

13) Tip: Make sure your furnace is operating at maximum efficiency by cleaning or replacing your furnace filters frequently, 4 or more times a year is best. Be sure to follow the instructions in your owner's manual. If you are not changing the filters at all, then your furnace will be working much harder to heat your home.





14) Use a ruler to measure how much insulation you have in the attic area

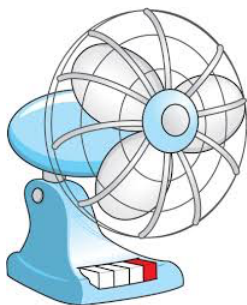


15) How many layers of glass do your windows consist of? Is there a special label on the glass? Do you also have storm windows?

16) Are there any air leaks in your house?

17) If your home has ceiling fans to keep people cool, are they turned off when there is no one in the room?

18) Do you turn the AC off when you are out of the house?



HOME ENVIRONMENTAL AUDIT

14) Tip: Insulation - Heat loss through the ceiling and walls in your home could be very large if the insulation levels are less than the recommended minimum.

Ask the adult in your household how thick the insulation in your house is, or what the R-value is. If you have less than 12 inches of insulation, or if the R-value is less than R-36 to R-48, you probably need more. Improving your home's insulation is one of the most effective and cost-efficient ways to reduce energy usage.

15) Tip: Single-pane with storm windows or double-pane Single-pane with storm windows or double-pane windows are best. During colder months, cover the inside of old single-pane windows, including the entire frame, with a clear plastic film, to prevent cold air from entering your home.

16) Tip: Air can leak through holes, cracks, and windows. On hot days, these leaks waste a lot of energy as cool air seeps outside. Seal holes or cracks around walls, ceilings, windows, and doors that leak air into or out of your home.

17) Tip: Ceiling fans don't cool the room, they just make people feel cool as the air blows over their skin, so they should be off when no one is around. In the winter, ceiling fans set to circulate air down from the ceiling help maintain warmth through the home making heating more efficient. It saves energy to leave fans on in colder months when at home.





LIGHT

HOME ENVIRONMENTAL AUDIT

Artificial lighting makes up almost 15% of a household's electricity use. Examine the wattage size of the light bulbs in your house. You may have 100-watt (or larger) bulbs where 60 or 75 watts would do. Incandescent lights (or bulbs) should be turned off whenever they are not needed. Only about 10%–15% of the electricity that incandescent lights consume results in light - the rest is turned into heat. Turning the light(s) off will keep a room cooler, an extra benefit in the summer.

To save at least 75% more energy use LED bulbs instead of incandescent or CFL bulbs. LED bulbs save energy and last significantly longer than other types of bulbs, reducing the amount you have to buy and throw away. They also produce very little heat, which makes it easier to keep the house cool in the winter.

19) Are there lights and televisions left on in rooms when nobody is around?

20) What kind of light bulbs do you use in your home?

19) Tip: Turn off lights and appliances like radios and televisions when you leave a room or are not using them, to save energy.

20) Tip: Do an inventory of the light bulbs in your home. As you count them, note if you could replace them with LED lighting instead.

Tip: If you replace 25 percent of your light bulbs in high-use areas, you can reduce energy used for lighting by 75 % or more.

Let the sun shine in! During the day when it is brighter outside, open the curtains and use the sunlight instead of turning on the lights.



APPLIANCES

HOME ENVIRONMENTAL AUDIT



Appliances and Home Electronics - If you live in a typical US home, your appliances and home electronics are responsible for about 20% of your energy bills. These appliances and electronics include the following: clothes washers and dryers, computers, dishwashers, home audio equipment, refrigerator and freezers, room air conditioners, televisions, DVD players and VCRs.

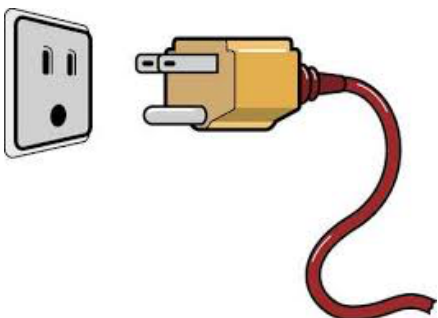
**21) Do you have energy saving appliances?
Are your appliances unplugged when not
in use?**

21) Tip: An increasing number of electrical appliances consume electricity when they are turned off or not in use. In some cases, this is because the appliance is on 'stand-by'. Considering unplugging appliances when they are not in use.

**22) How do you wash your dishes: by hand
or in a dishwasher?**

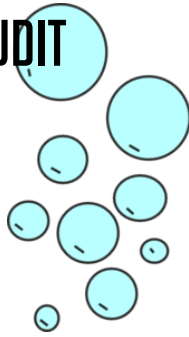
22) Tip: It's commonly assumed that washing dishes by hand saves hot water. Wrong: You can consume less energy with an energy efficient dishwasher when properly used and when only operating it with full loads.

Tip: If you use a dishwasher, ensure that it is full when you run it and use the economy cycle, if possible. If you are replacing any appliances, always look for the Energy Star symbol. Turn off the dishwasher right before the drying cycle and let the dishes air dry.



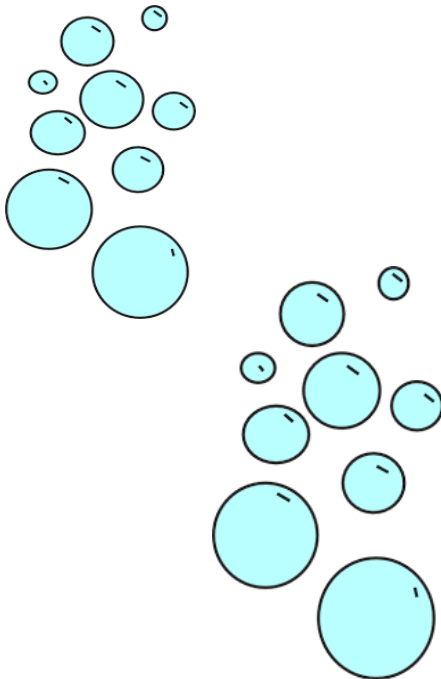
HOME ENVIRONMENTAL AUDIT

23) What type of washing machine do you use?



24) When you do laundry, how full are your loads and what heat do you use?

25) Does your refrigerator close properly?



23) Tip: Front-loading washing machines generally use one-third less water than top loaders.

24) Tip: Unlike dishwashers, clothes washers don't require a minimum temperature for optimum cleaning. Therefore, to reduce energy costs, you can use either cold or warm water for most laundry loads. Cold water is always sufficient for rinsing. Inefficient clothes washers can cost three times as much to operate than energy-efficient ones

Use full loads as much as possible. Be sure to adjust the load setting on your machine when you don't have a full load to use less water. Doing many smaller loads of laundry is the least efficient use of energy.

25) Tip: Don't leave the refrigerator door open. Decide what you want to eat before you open the door.

Analyzing a refrigerator's electricity use is complicated. It runs every day, even if no one opens the door. Every time someone does open the door, though, the warm air that enters forces the refrigerator to work harder and use more electricity. Putting warm food in the refrigerator also makes it work harder. Make sure the seal around the door is clean so you close it fully. Have you ever left the door open while you got out all of the makings for a good sandwich? Each time you do, you waste electricity! What steps might you take to reduce refrigerator electricity use in your home?





AND A LITTLE BONUS...

The cost of commercial, chemical based products can be high, including long term health concerns for the family, and environmental pollution caused by their manufacture. In the U.S., for example, 1 in 3 people suffer from allergies, asthma, sinusitis or bronchitis potentially caused by pollutants in the environment, including your cleaning products! Treatment for these conditions should include reducing synthetic chemicals in the home. Below are ways in which you can replace your household cleaning products with all natural homemade solutions!



Please look in your cabinets and see if any of your home cleaning products are composed of harmful chemicals. Below are a few of the worst to look out for when reading the labels of your cleaning products:

Phthalates: found in many fragranced household products. They are endocrine disrupters.

Perchloroethylene or “PERC”: found in dry-cleaning solutions, spot removers, and carpet and upholstery cleaners. It is a neurotoxin.

Triclosan: found in most liquid dishwashing detergents and hand soaps labeled “antibacterial. It is an aggressive antibacterial agent that can promote the growth of drug-resistant bacteria.

Quarternary Ammonium Compounds, or “QUATS”: found in fabric softeners, liquid and sheets, and most household cleaners labeled “antibacterial.” Is another antimicrobial and can also promote the growth of drug-resistant bacteria.

2-Butoxyethanol: found in window, kitchen and multipurpose cleaners. Can cause sore throats, narcosis, pulmonary edema, and severe liver and kidney damage. It is not required by law to be listed on the product.

Ammonia: found in polishing agents and glass cleaners. It is a powerful irritant for everyone, and especially if you have any type of lung issue.

Chlorine: found in bleach, scouring pads, toilet bowl cleaners, mildew removers, laundry whiteners, household tap water. It is both a serious thyroid disrupter and respiratory irritant.

Sodium Hydroxide: found in oven and drain cleaner. It can burn skin and cause a long lasting sore throat

HOUSEHOLD CLEANING PRODUCTS



ALL-NATURAL INGREDIENTS

Most modern synthetic cleaning products are based on age-old formulas using natural ingredients that were passed down through the generations because the chemistry was right. Going back to the original, naturally derived ingredients is a way to make cleaning products that work, don't pollute and save you money. Most are found in your kitchen cupboards. Mix and match with well-chosen and environmentally friendly green cleaning products found in health food stores, and you can easily and simply transform your home into a non-toxic and healthy haven.



Vinegar:

White vinegar is effective at dissolving grease and makes a great surface cleaner in the kitchen and bathroom. Vinegar works well because of its acidic nature and antibacterial effect. Japanese research found that the bactericidal activity of vinegar increased as the temperature of its solution increased, underscoring the need for double benefit of warm cleaning solutions. For best results mix 1 of vinegar with water in a container or spray bottle and use it to clean windows and mirrors to toilets and floors.

Baking Soda:

Baking soda deodorizes and has an abrasive quality that outshines toxic, powdered cleansers. Use on surfaces in the bathroom and kitchen to remove stains or even clean the inside of a messy oven when used with vinegar to make a paste. Adding salt can provide a boost in scrubbing power.

Lemon Juice:

The inclusion of lemon in many commercially available cleaning products is one rare area where they got it right! Lemon juice kills mold, cuts through grease, and leaves a streak-free shine. The applied food science laboratory in Lincoln Nebraska examined the ability of lemon oil to inhibit mold growth by applying a coating of lemon juice and vinegar to roast beef. This was found to support prevention of spore germination and outgrowth. You can combine lemon juice with vinegar or olive oil to make compound cleaning products that work better and have a natural scent.

Castile Soap: Castile soap is a natural liquid or hard soap made from vegetable oils. The first Castile soaps were made with the local olive oil and contained no tallow, or rendered animal fats. Today, Castile soap appears in many stores, often scented with essential oils, as a multipurpose cleanser.

Olive Oil:

Polishing wood with olive oil and lemon juice moisturizes it and provides amazing shine with a fresh scent. Blend 1 cup of olive oil and 1/2 cup of lemon juice in a spray bottle, mist onto a soft cloth and polish wood furniture the natural way.



RECIPES!

GLASS CLEANER

1. Add 1/2 cup distilled vinegar to a new spray bottle.
2. Fill with distilled water, gently shake.
3. Spray on mirrors and windows, polish with a crumpled newspaper (you'll be surprised how well the newspaper works).

POWERFUL SURFACE SCRUB

1. Mix 1 cup baking soda and 1/4 cup liquid castile soap.
2. Add 5 teaspoons of vegetable glycerin and 5-10 drops tea tree oil, depending on preference. Glycerin is a natural preservative and tea tree oil has antibacterial properties.
3. Scrub with a microfiber cleaning cloth to use on sinks and other bathroom surfaces.
4. Rinse with hot water and polish with a dry microfiber cloth

CARPET FRESHENER

Use baking soda as a carpet freshener. Just sprinkle some baking soda on your dry carpet and let it sit about 15 minutes before vacuuming to freshen it nicely.

HOMEMADE LIQUID DISH SOAP

- 1/2 cup warm distilled water
- 2 tsp kosher salt
- 1/2 cup white vinegar
- 1/2 cup Dr. Bronner's Sal Suds
- 1 tsp lemon juice
- Lemon essential oil (optional)

HOMEMADE ALL-PURPOSE CLEANER

- 1/2 c white vinegar
- 2 Tbsp baking soda
- 10 drops tea tree, lavender, or lemon essential oil (for their disinfectant properties)

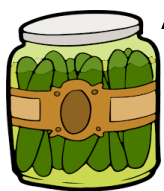
FURNITURE POLISH

- 2 Tbsp. Olive oil
- 1/4 cup distilled white vinegar
- 1/4 tsp. lemon juice or lemon oil

EXTRA TIPS

- Clearly label your homemade cleaning supplies.
- Mix enough for one month at a time.
- Do not reuse containers from commercial cleaning supplies as they may contain chemical residues.
- Add cleansing essential oils such as lavender, tea tree oil, or rosemary for essence, scent, and benefit.





A DEEPER LOOK INTO YOUR KITCHEN

Do you take reusable bags to the grocery store or do you use the one's they provide?

It is easy take your own reusable bags to the grocery store to carry your goods home in. If you plan to buy produce or bulk goods, you should also take separate bags for those items as well. It cost a great deal of money, resources and energy, not to mention the use of toxic chemicals, to produce plastic and paper grocery bags. Reduce your footprint by bringing your own.

How do you store your food?

Often times the most sustainable storage option is the one you already have in your kitchen cupboards, and for many people this will inevitably include some variety of plastic storage containers. That's OK! Even if you are committing to a plastic-free life, please don't feel as though you need to throw everything out and start from scratch. Your plastic containers have already been produced, packaged, and sold, so you may as well use them as long as you can. However, transitioning to glass over time is a healthy option because toxins from plastic, which are carcinogenic and disrupt the endocrine system, can leak into your food over time.

Even better than plastics are recycled glass jars you might have around the kitchen! Simply rinse and reuse jars from pasta sauce, almond butter, pickles, you name it! Feel free to create simple, easy to replace, labels with washi tape and permanent marker.

Ditch the disposables! One of the easiest ways to cut down kitchen waste is to stop using disposable products like plastic wrap, paper towels, aluminum foil, and zip-top plastic baggies.

Here are a few ideas for replacements:

Replace paper towels with washable hand towels or 100% recycled paper towels.

Some companies are making sheets made from hemp and cotton cloth infused with beeswax and natural oils. They are flexible and conform to cover bowls, wrap cheese, or seal the ends of cut veggies. They are almost infinitely reusable, and you can simply compost it when it wears out! Similarly, reusable fabric snack and sandwich bags have replaced zip-lock bags in some places, and they're simple to use.

If you do choose to use products like plastic zip lock bags, tin-foil, etc., please remember to rinse them and use them multiple times before throwing them out.





THANK YOU!



Please take a look at the 50 simple things, www.earthguardians.org/50simplethings, if you want to continue to refine your lifestyle to be a protector and live in harmony with the earth. The 50 Simple things is more like a lifestyle audit that will guide you to living a more sustainable life.



...AND TALK TO US

Please let us know when you complete the “Earth Guardians Environmental Audit” by sending us a photo, video or write up of what you did. Include the hashtags, #homeenvironmentalaudit #earthguardians, and we will put it on social media.

And thank you for BEING THE CHANGE!

