



How Big Is Your Carbon Footprint?

The size of your carbon footprint indicates how much impact you have on the environment.

Overview

Complete the Carbon Footprint Survey and color a footprint to show the relative size of your family's impact on the environment.

Greenhouse Gases and Our Carbon Footprint

The light and heat from the sun support life on Earth and provide energy needed for plants to grow. Energy from the sun drives the Earth's weather and climate. The Earth absorbs some of the energy it receives from the sun and radiates (sends out) the rest back toward space. However, certain gases in the atmosphere, called greenhouse gases, absorb some of the energy radiated from the Earth and trap it in the atmosphere. These gases act as a blanket, making the Earth's surface warmer than it otherwise would be.

In the past 100 years or so, humankind has created machines, factories, and vehicles that have greatly increased the amount of greenhouse gases in our atmosphere. This increased level of greenhouse gases means more heat is held in the atmosphere and the Earth is getting warmer. These warmer temperatures are causing changes around the world on land, in the oceans, and in the air. This could upset the delicate balance that sustains life.

Whether we realize it or not, we all emit carbon dioxide, one of the greenhouse gases, through our day-to-day activities. The amount we emit is referred to as our "carbon footprint." The bigger the footprint, the more carbon dioxide that comes from each of us as a result of the choices we make.



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Climate change caused by excess greenhouse gases and a big carbon footprint can cause:

- Heat waves that damage crops, stress livestock, and make life difficult for people.
- More air pollution, which is linked to allergies, asthma, and other health problems.
- Severe storms and flooding due to higher sea levels.
- Loss of habitat as the climate changes, particularly in Arctic regions.

Families can help reduce their carbon footprint by focusing on four major areas that generate excess carbon dioxide: housing and household energy use, transportation, personal habits, and recycling. In this game, you'll have the chance to estimate the relative size of your family's carbon footprint as well as learn easy ways you can help reduce it.

Materials:

- Carbon Footprint Survey sheet, one per family team
- Carbon Footprint drawing
- Crayons, markers, or colored pencils in the suggested colors

The Carbon Footprint Survey will ask a series of questions that will direct the participant to color lines around the footprint drawing. The more greenhouse gases you produce, based on your answers, the bigger the carbon footprint grows. Different color crayons will represent the four categories of behavior surveyed:

- Housing and Home Energy: **RED**
- Transportation: **BLUE**
- Personal Habits: **GREEN**
- Recycling Habits: **BROWN**



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Carbon Footprint Survey: How Big Is Your Family's Carbon Footprint?

Some of our lifestyle choices and day-to-day activities emit excess carbon dioxide and other greenhouse gases into the atmosphere. The amount of greenhouse gases we produce is referred to as our "carbon footprint." Too much carbon dioxide and other greenhouse gases in our atmosphere can lead to unnatural climate change, which can have a harmful effect on our planet. Take this survey to get a sense of the size of your family's carbon footprint.

Housing and Home Energy

1. If you live in a single-family home, color 4 rings **RED**; if you live in an apartment or other type of home, color 2 rings **RED**.
2. If you **don't** use energy-efficient light bulbs such as CFLs (compact fluorescent), color 1 more ring **RED**.
3. If your home **doesn't** have a programmable thermostat, color 1 more ring **RED**.
4. If you are **not** familiar with the Energy Star appliance rating system, color 1 more ring **RED**.

Transportation

5. For every small car in your family, color 1 ring **BLUE**.
6. For every medium or large car in your family, color 2 rings **BLUE**.
7. If you **don't** regularly change the air filter on your car and check the tire pressure, color 1 more ring **BLUE**.
8. For every airplane trip you've taken in the past year, color 1 more ring **BLUE**.

Personal Habits

9. If you are a vegetarian, color 1 ring **GREEN**; if you are **not** a vegetarian, color 2 rings **GREEN**.
10. If you **never** eat organic food, color 1 more ring **GREEN**.
11. If you take baths, run the faucet while brushing your teeth or washing dishes, or water your lawn several times a week, color 1 ring **GREEN**.

Recycling and Waste

12. If you usually recycle your household trash, color 1 ring **BROWN**; if you **never** recycle, color 2 rings **BROWN**.
13. If you **never** compost your yard and kitchen waste, color 1 more ring **BROWN**.

Now read on to learn what you can do to reduce the size of your carbon footprint.



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What can you do to reduce the size of your carbon footprint?

1. Single-family homes generally consume more energy per resident than multifamily housing such as apartment buildings. But no matter where you live, there are things you can do to reduce the amount of energy your home uses, thus reducing your carbon footprint.
2. Energy-efficient light bulbs such as compact fluorescent and LED light bulbs consume less electricity than conventional incandescent light bulbs. Change your household fixtures to CFLs and you'll save money on your household energy bills, too.
3. A programmable thermostat turns your home's heating or air-conditioning up and down automatically, depending on the time of day. When your home's energy system is working efficiently, it wastes less energy, thus reducing your carbon footprint.
4. Energy Star rated appliances use less energy. When purchasing new appliances such as a refrigerator, range stove, microwave, or air conditioner, look for the Energy Star label to save energy, save money, and reduce your carbon footprint.
5. All gasoline-powered automobiles emit carbon dioxide.
6. The larger the car, the more carbon dioxide is emitted.
7. Cars that are properly maintained are more energy-efficient. Be sure to regularly change the air filter and make sure the tires are always properly inflated.
8. Virtually all modes of transportation consume energy, thus they impact your carbon footprint.
9. The growing, processing, packaging, delivery, and distribution of food requires energy from farms, factories, trucks, grocery stores, and more. Because a vegetarian diet does not include meat, a vegetarian tends to have a smaller carbon footprint than does a nonvegetarian.
10. The production of organic food puts less stress on the environment, so your carbon footprint is smaller if you tend to eat organic food.
11. Water that goes down our drains and sewers must be processed through water treatment plants, even if the water is clean. Using only the amount of water you really need helps reduce your carbon footprint.
12. Recycling is good for the environment because it keeps excess waste out of landfills and trash incinerators. If you recycle on a regular basis, your carbon footprint is smaller.
13. Composting is good for the environment because it keeps kitchen and garden waste out of the trash and it encourages natural gardening practices. If you compost at your house, your carbon footprint is smaller.

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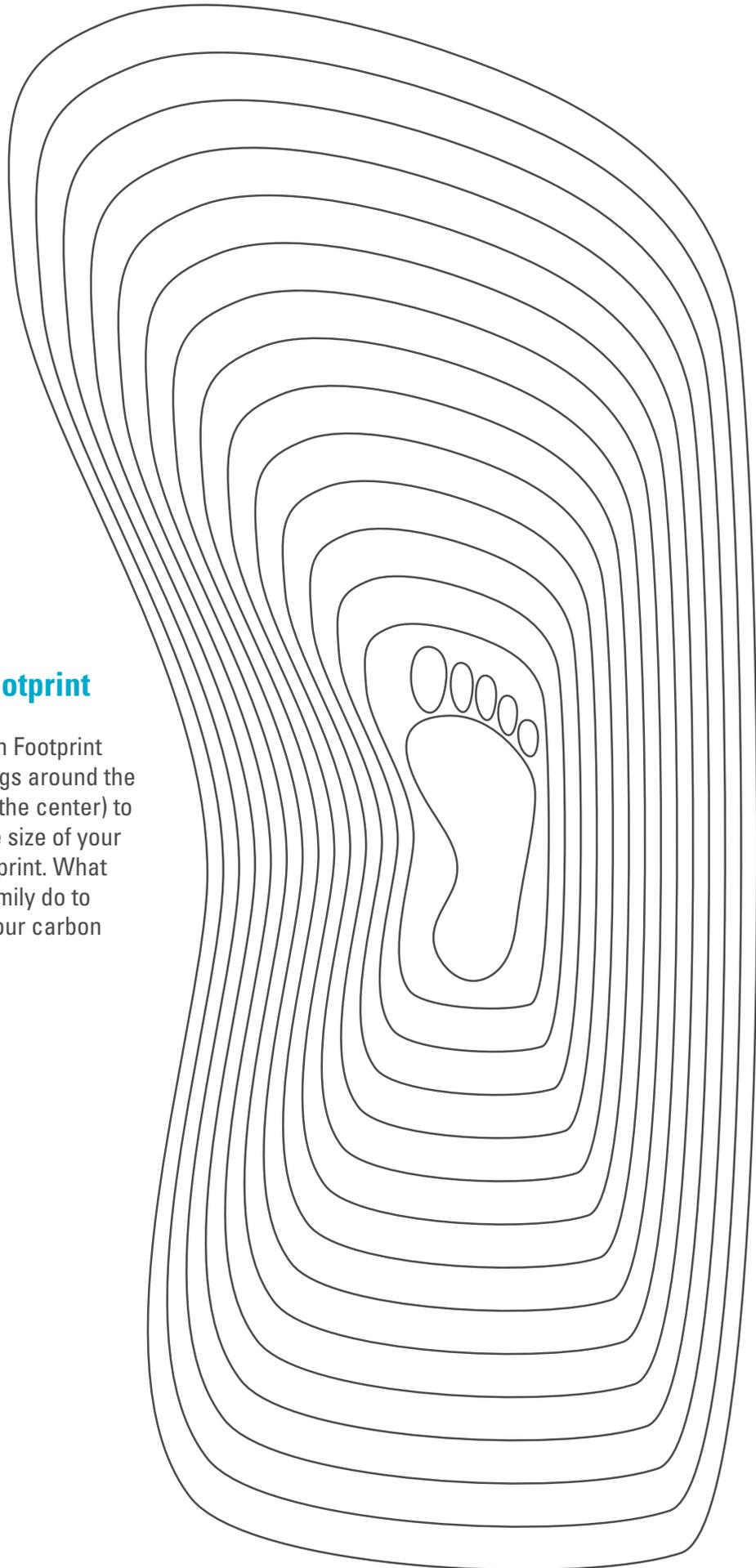


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Your Carbon Footprint

Based on the Carbon Footprint Survey, color the rings around the footprint (start from the center) to estimate the relative size of your family's carbon footprint. What can you and your family do to reduce the size of your carbon footprint?





Many Leaves, One Tree

There are many things we can all do to help protect the environment and do our part as a team. In this activity, participants will play a game in which they learn some specific ways they can make a difference and reduce climate change.

Then they will choose a specific action they plan to take, write it on a leaf, and attach it to the “Go Green and Join the Team” tree. The tree can be displayed in the school to demonstrate how small actions among individuals can make a big difference for our environment.

Object of the game: Find the player whose card has a matching picture. Hold the cards together to read a message about a particular Go Green action. Then help create a tree poster to be displayed at school that shows all of the ways you plan to help protect the environment.

Note: This is a good place to hand out “Go Green and Join the Team” and EPIC Pledge forms for Team ENERGY STAR. The EPIC Pledge asks families to name at least one way they will help protect the environment.

Materials:

- Matching cards printed on card stock or printed on paper and pasted onto file folders or poster board
- Butcher paper
- Tape to hang butcher paper on wall, if desired
- Brown marker or craft paint
- Black marker
- Paper leaves (template included)
- Ink pens
- Scissors
- Glue or tape
- “Go Green and Join the Team” forms



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Preparation:

1. Print two sets of matching cards onto 8.5-inch-by-11-inch paper or card stock. Cut along the lines to separate cards. If the cards are printed onto regular paper, paste them onto a more durable material, such as file folders or poster board, and trim.
2. Print out several copies of the leaf template. Cut the copies into squares, one leaf per square.
3. On the butcher paper, use brown marker or craft paint to draw a tree trunk and some tree branches.
4. Across the top of the butcher paper poster, use the black marker to write this message: "Many Leaves, One Tree: How [Your School Name] Is Going Green as a Team."
5. Place the poster in a location where participants can add their leaves easily. You may want to tape it on a wall or lay it across a table.
6. Place scissors, leaves, and pens together on a table.

How to play:

1. A group of players will arrive at the station and pick up a card.
2. Each player will look for someone with a matching card with a message about steps that kids and families can take to protect the environment.
3. After all players have paired up, one person from each pair will read the message aloud to the group.
4. Players will return the cards, then add leaves to a tree poster. Each person will cut out a leaf and write one way they will help protect the environment on the leaf. Players can use one of the messages from the matching game or think of their own. Then attach the leaf to the tree poster with glue or tape.
5. Ask players to fill out the "Go Green and Join the Team" form for Team ENERGY STAR with their family and name the ways they will help protect the environment.

Key messages in the "Many Leaves, One Tree" activity:

- Working together, we can make a big difference in protecting our environment by reducing climate change.
- Choose one Go Green action, then get your whole family involved by doing it together.
- When you make a commitment to protect the environment, you are joining with people at your school, in your community, and across the country.
- There are many ways your family can help protect the environment. Below are some of them. Trees are not only symbols of all of us working together as leaves on a tree, but trees also do a lot to protect the environment.
 - Trees absorb carbon dioxide, a greenhouse gas that contributes to global warming and climate change.
 - Trees provide shade to help cool buildings and reduce the need for air-conditioning, which saves energy.

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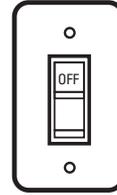
Go Green Actions for the Matching Cards

Turn things off



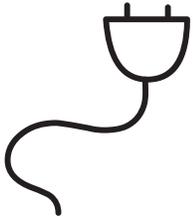
Turn off the TV, lights, fans, and other electronics when not using them.

Turn things off



Turn off the TV, lights, fans, and other electronics when not using them.

Unplug electronics and chargers



Unplug electronics and battery chargers when they are finished charging.

Unplug electronics and chargers



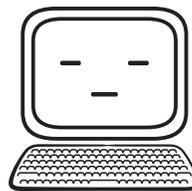
Unplug electronics and battery chargers when they are finished charging.

Put your computer to sleep



Use the power management settings for the computer and monitor when you take a break.

Put your computer to sleep



Use the power management settings for the computer and monitor when you take a break.

Use foot power



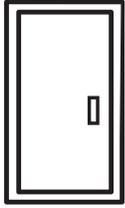
Walk, ride a bike, or skateboard instead of using a car.

Use foot power



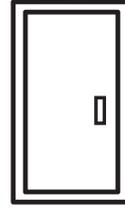
Walk, ride a bike, or skateboard instead of using a car.

Close doors and windows



Keep doors and windows closed when the air-conditioning or heat is on. Hot and cold air escape quickly!

Close doors and windows



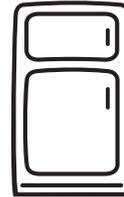
Keep doors and windows closed when the air-conditioning or heat is on. Hot and cold air escape quickly!

Close the refrigerator door



Don't leave the refrigerator door hanging open when figuring out what to eat.

Close the refrigerator door



Don't leave the refrigerator door hanging open when figuring out what to eat.

Seal drafty spots in the house



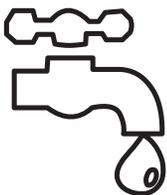
Weather-strip windows and doors where there are drafts.

Seal drafty spots in the house



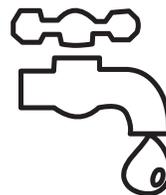
Weather-strip windows and doors where there are drafts.

Don't waste water



Save hot water by taking shorter showers. Also remember to turn off the water when washing dishes or brushing your teeth.

Don't waste water



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Shop for the ENERGY STAR® logo



When your family is shopping for a new TV, light bulb, appliance, or other product that uses energy, recommend that they look for products that are labeled with the ENERGY STAR logo. This means that they are certified as energy-efficient by the EPA.

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Remember to recycle



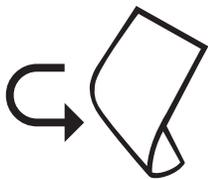
Recycle paper, plastic, glass, and cans. When purchasing new items, look for ones made from recycled materials.

Remember to recycle



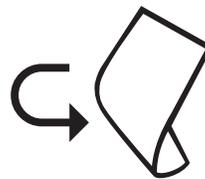
Recycle paper, plastic, glass, and cans. When purchasing new items, look for ones made from recycled materials.

Use both sides of your paper



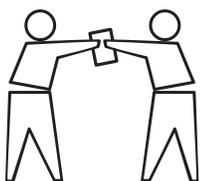
Print double-sided, and use both sides of a piece of paper before recycling it away.

Use both sides of your paper



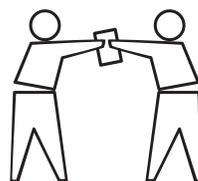
Print double-sided, and use both sides of a piece of paper before recycling it away.

Share or borrow from a friend



The next time you want to purchase a new book or video game, borrow it from the library or a friend instead of buying a new copy. Sharing these items is a great way to reduce waste.

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Plant a tree



Trees help the environment in many ways. For one, they help clean the air by absorbing carbon dioxide and producing oxygen.

Plant a tree



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Make Your Own Energy-Efficient House

Summary: The two fun patterns go back-to-back to create the inside and outside of a home. Decorate them, cut them out, and glue them together—you'll see some of the ways you can save energy while keeping your house warm in the winter and cool in the summer. Don't forget to read the energy-saving tips on the pattern—can you tell which ones are pictured in the house?

Materials:

- House patterns (inside and outside) printed on white card stock, one set for each participant (NOTE: The craft works best if you print them back-to-back on one sheet of card stock so the features line up. You can also print the patterns on separate sheets and have students glue them together after cutting them out.)
- Coloring materials such as crayons or markers
- Pink felt or craft foam
- Glue (tacky glue works best)
- Scissors
- Optional: Clear plastic sheets, such as transparency/overhead projector material, to represent window weatherization

Instructions:

1. Decorate the house pattern (both sides, which represent the inside and outside of the house) and trees.
2. Cut out the house and trees along the thick solid lines (not the dashed lines—those indicate folds).
3. Optional: Cut the door along the top, the bottom, and the side with the doorknob so that it opens.
4. Optional: Cut out the windows. You can also replace them with clear plastic to represent actions you would take to properly insulate your home.
5. Fold along the dashed lines.
6. "Caulk" the house frame together with tacky glue.
7. Glue the pink "insulation" to the floor of the attic.
8. Glue the roof to the house.
9. Glue the trees to the outside of the house to provide shade.
10. Don't forget to read the energy-saving tips and see which ones you can find in your newly built house!

Find the Energy Efficient House ENERGY STAR® home tool online at energystar.gov/home.

Visit the ENERGY STAR kids' room at energystar.gov/kidsroom.

Build a house that teaches about the benefits of proper insulation and other ways to reduce the amount of energy you use.

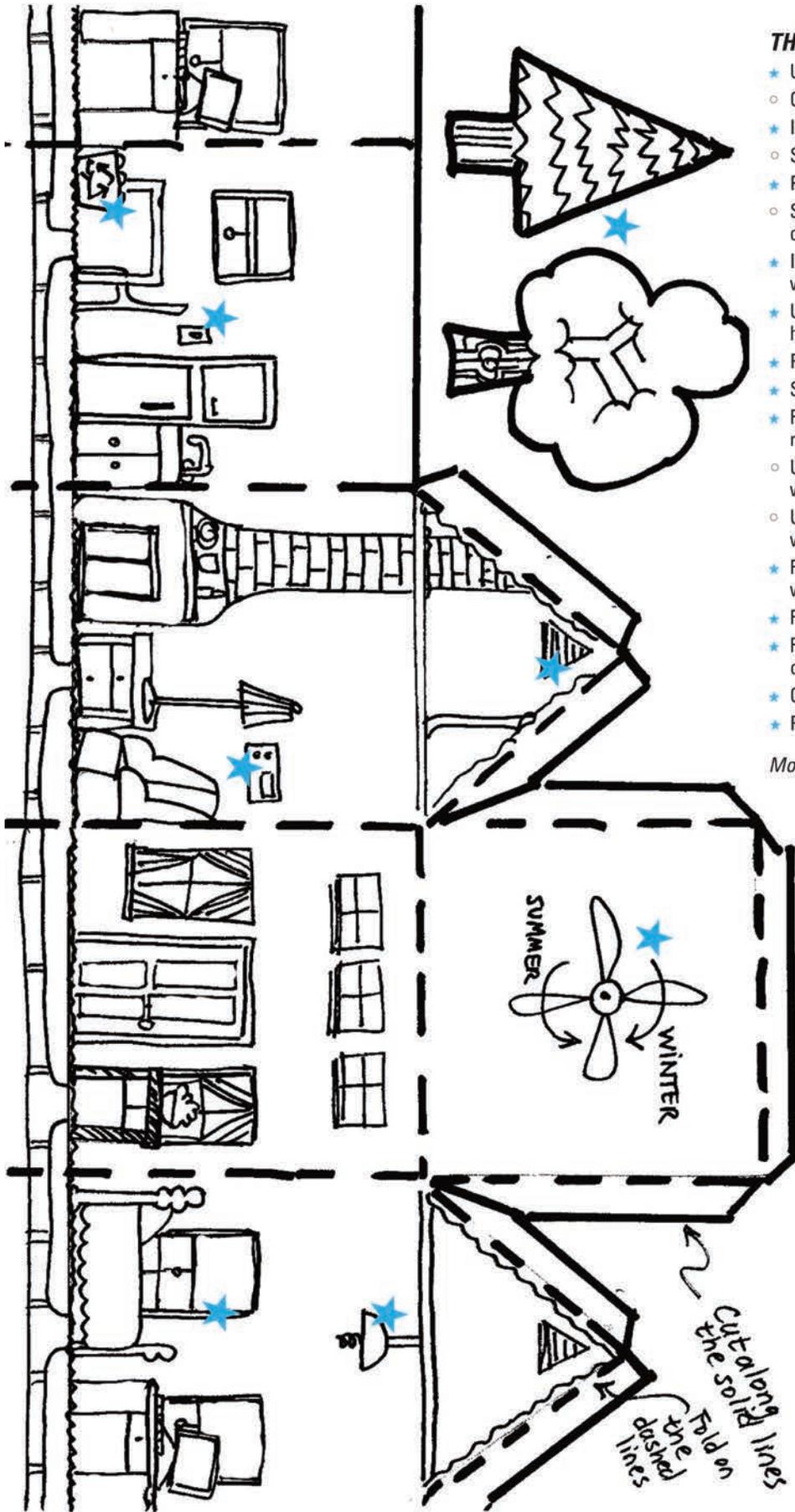


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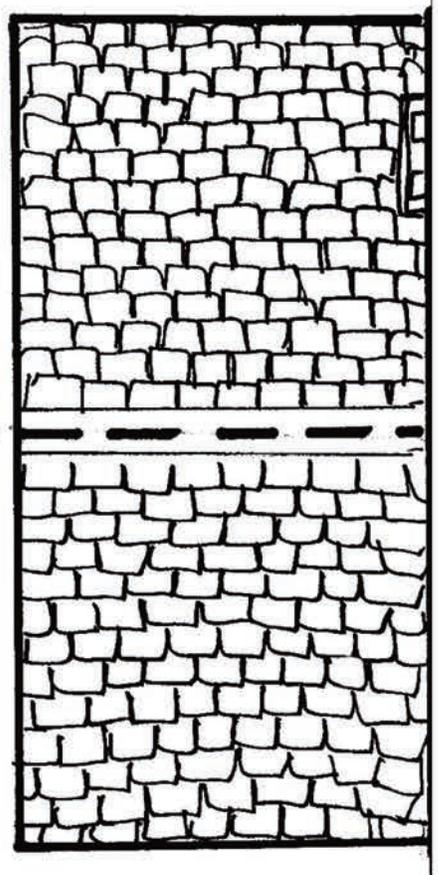


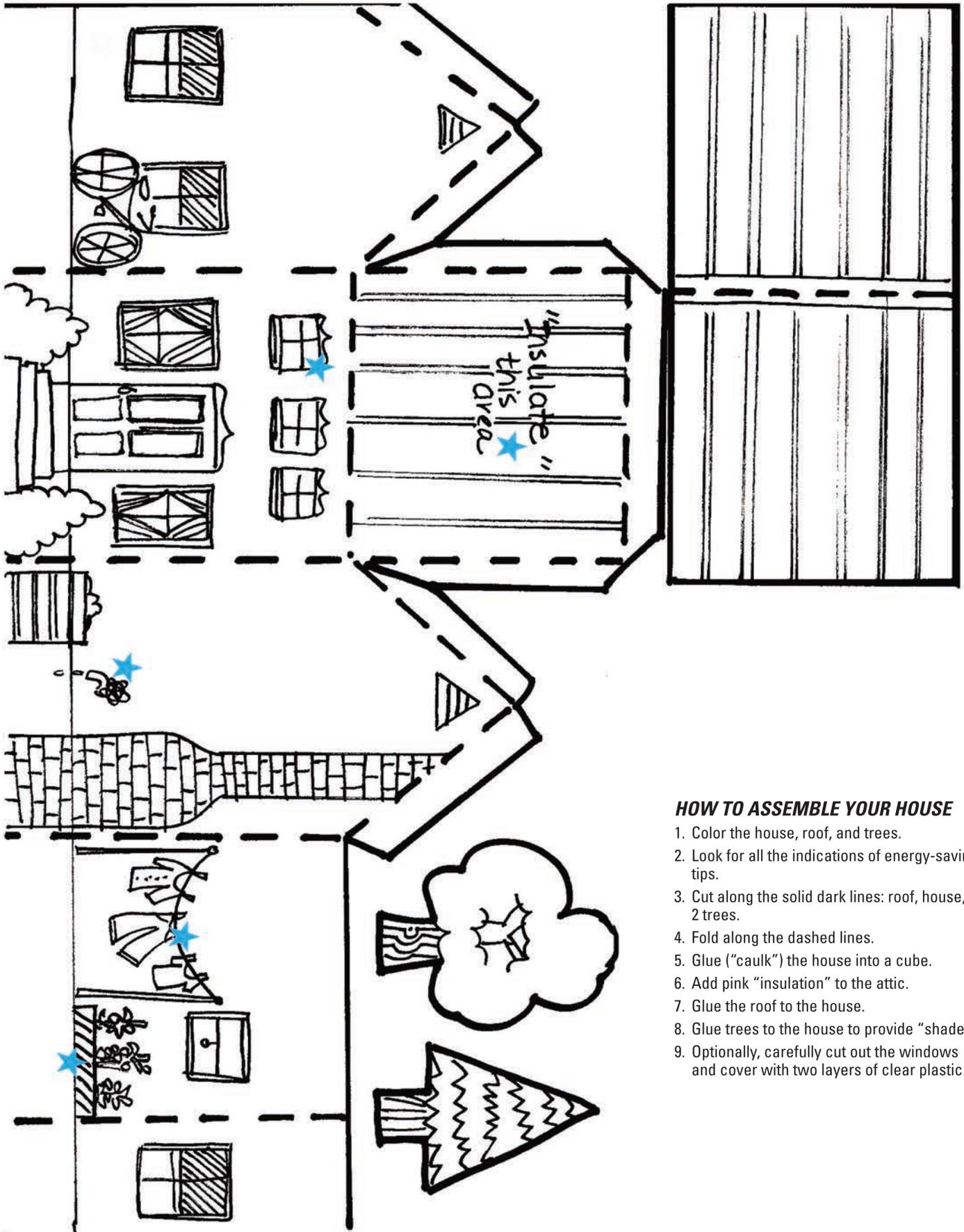


THE ENERGY-EFFICIENT HOUSE

- ★ Use a programmable thermostat
- Caulk windows and cracks
- ★ Insulate attic, crawl spaces, walls
- Seal gaps in ductwork with duct mastic
- ★ Properly ventilate attic
- Seal around rim joist, electrical boxes, openings to the outdoors
- ★ Install double-paned windows or storm windows
- ★ Use window shades and curtains to keep the heat in (winter) or out (summer)
- ★ Plant trees to shade the house
- ★ Switch from incandescent to CFL bulbs
- ★ Remember to turn off lights when leaving a room
- Unplug power chargers and docking stations when not in use
- Use a power strip as a central turn-off point when you are done using equipment
- ★ Repair leaky faucets. (A leaky faucet can waste gallons of water.)
- ★ Recycle
- ★ Run ceiling fan clockwise in winter, counterclockwise in summer
- ★ Consider drying clothes outdoors
- ★ Plant a vegetable garden

More tips at ENERGYSTAR.gov





HOW TO ASSEMBLE YOUR HOUSE

1. Color the house, roof, and trees.
2. Look for all the indications of energy-saving tips.
3. Cut along the solid dark lines: roof, house, 2 trees.
4. Fold along the dashed lines.
5. Glue ("caulk") the house into a cube.
6. Add pink "insulation" to the attic.
7. Glue the roof to the house.
8. Glue trees to the house to provide "shade."
9. Optionally, carefully cut out the windows and cover with two layers of clear plastic.



Go Green Family Challenge

What you'll need:

- Included list of categories and answers
- Two desk bells
- Moderator
- Scorekeeper
- Prizes for winners

Have parent-child teams square off to name the best ways to save energy at home and on the go as well as other important environmental tips.

How it works: Organize players into two teams of four (two parent-child pairs per team). If you have high participation, increase the number of parent-child pairs on each team. The moderator announces the number of rounds to be played (up to ten) and starts the game by naming the first category. The team to ring its bell first and give three correct responses in each category earns six points and wins the round. The opposing team is given the opportunity to guess at the remaining responses on the written list, earning two points for each correct response. Once the round is over, read out the remaining items on the list (some lists include more than three items), then start the next round. Finish the game with the bonus question asked to both teams. The team with the most points at the end of the game wins.

What you'll learn: Top ways to save energy and other environmental tips.

Variations: Make the game easier for young children and players who aren't familiar with ways to save energy in one or both of the following ways:

- Give hints: The moderator offers one hint per item on the list.
- Alter the rules so each team is required to choose just one or two correct answers per category.



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Categories and Answers for Go Green Family Challenge

NAME 3 OF THE TOP CONTRIBUTORS TO CLIMATE CHANGE

1. Power plants
2. Cars
3. Trucks
4. Airplanes
5. Buildings
6. Homes

NAME 3 OF THE TOP WAYS TO SAVE ENERGY AT HOME IN ADDITION TO USING ENERGY STAR PRODUCTS

1. Add insulation
2. Seal air leaks
3. Properly program your thermostat
4. Turn off lights when not in a room
5. Turn off electronics when not in use
6. Put computers in sleep mode

NAME 3 WAYS TO GO GREEN AT SCHOOL

1. Remember to turn off the lights when you leave the classroom
2. Recycle paper in the classroom
3. Recycle bottles and cans and other recyclables in the cafeteria
4. When you print from the computer, print double-sided
5. Write on the front and back of a sheet of paper

NAME 3 OF THE TOP PLACES IN HOMES THAT ARE MOST LIKELY TO BE DRAFTY

1. In the attic, if finished, or near the entrance to the attic if unfinished
2. In the basement
3. Near doors that go outside
4. Near windows
5. Underneath baseboards
6. Around wall sockets or light switches
7. Near plumbing and other fixtures that connect to the outside

NAME 3 OF THE TOP WAYS TO HELP PREVENT HEAT LOSS THROUGH WALLS OR CEILINGS

1. Add insulation
2. Seal cracks with caulk
3. Use spray foam in a can
4. Weatherstrip windows and doors
5. Replace windows
6. Install attic hatch cover
7. Keep doors and windows closed

NAME 3 OF THE TOP MOST USED LIGHTS IN THE HOME

1. Kitchen ceiling light
2. Living room table and floor lamps
3. Bathroom vanity
4. Outdoor porch or post lamp
5. Bedroom nightstand

NAME 3 OF THE TOP WAYS YOU CAN SAVE WATER IN THE HOME*

1. Look for the WaterSense label on products that use water, such as toilets and faucets
2. Fix leaks around the house; fixing small leaks in your house could save 200 gallons of water per week
3. Turning off the tap while brushing your teeth in the morning and at bedtime can save up to 8 gallons of water per day, which equals 240 gallons a month
4. Wash only full loads of dishes and clothes, or be sure to lower the water settings for smaller loads
5. For a cool refreshment, keep a pitcher of water in the refrigerator instead of running the tap until it is cold
6. Be sure to water your yard or garden only when needed and water during the cooler morning hours to reduce evaporation
7. Set sprinklers to water lawns and gardens only—check that you're not watering the street or sidewalk

*This is not a complete list. PTO leaders or volunteers can decide whether the answer is correct or not based on their own judgment.

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NAME 3 THINGS YOU CAN COMPOST**

1. Animal manure
2. Cardboard rolls
3. Clean paper
4. Coffee grounds and filters
5. Cotton rags
6. Dryer and vacuum cleaner lint
7. Eggshells
8. Fireplace ashes
9. Fruits and vegetables
10. Grass clippings
11. Hair and fur
12. Hay and straw
13. Houseplants
14. Leaves
15. Nutshells
16. Sawdust
17. Shredded newspaper
18. Tea bags
19. Wood chips
20. Wool rags
21. Yard trimmings

Not Compostable**

1. Black walnut tree leaves or twigs: Release substances that might be harmful to plants
2. Coal or charcoal ash: Might contain substances harmful to plants
3. Dairy products (e.g., butter, egg yolks, milk, sour cream, yogurt): Create odor problems and attract pests such as rodents and flies
4. Diseased or insect-ridden plants: Diseases or insects might survive and be transferred back to other plants
5. Fats, grease, lard, or oils: Create odor problems and attract pests such as rodents and flies
6. Meat or fish bones and scraps: Create odor problems and attract pests such as rodents and flies
7. Pet wastes (e.g., dog or cat feces, soiled cat litter): Might contain parasites, bacteria, germs, pathogens, or viruses harmful to humans
8. Yard trimmings treated with chemical pesticides: Might kill beneficial composting organisms

**U.S. Environmental Protection Agency, Office of SolidWaste,
epa.gov/osw/conserve/rrr/composting/basic.htm; updated Oct. 7, 2008

BONUS QUESTION:

Ask to both teams; each team gets three guesses

Buying energy-efficient products that carry the ENERGY STAR logo for your home can save one-third on your energy bill. Name three ENERGY STAR qualified products you can find in a home.

Lighting

1. Light bulbs
2. Light fixtures
3. Decorative light strings

Home Electronics

1. TVs
2. DVD players
3. Cordless phones
4. Battery chargers
5. Digital-to-analog converter boxes
6. Home audio systems and stereos
7. Set-top boxes
8. External power adapters

Office Products

1. Computers
2. Monitors
3. Photocopiers and fax machines
4. Digital duplicators
5. Multifunction printers/scanners/all-in-ones

Appliances

1. Refrigerators
2. Washing machines
3. Dishwashers
4. Freezers
5. Room air cleaners

Heating and Cooling

1. Room air conditioners
2. Windows
3. Dehumidifiers
4. Furnaces
5. Ceiling fans
6. Heat pumps
7. Boilers
8. Central air conditioners
9. Insulation
10. Ventilating fans
11. Water heaters

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Green-Living Crafts

Mini Bulletin Board

Give a favorite old T-shirt new life by using it as the covering for a notice (bulletin) board.

Cut an 8-inch-by-8-inch square from a sheet of 1/2-inch-thick rigid insulation board, which can be found at most home improvement stores. (You can get 72 squares from one 4-foot-by-8-foot sheet at a cost of about 18 cents per square.) Take an old T-shirt and cut a 9-inch-by-9-inch square from the fabric. Stretch the T-shirt fabric over the board and secure with staples or masking tape on the back of the board. Add a ribbon hanger using straight pins—run the ribbon up one side edge and down the other, leaving enough length at the top to hang the board from a doorknob or wall.

Have fun—and save energy and resources—by turning commonly discarded materials and materials related to energy consumption into a useful or decorative craft.

Make it extra special: Cut the fabric from a favorite “too small” T-shirt and feature the T-shirt design on the face of the board. Hang several as unique wall decor for your bedroom.



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Green-Living Crafts

Mini Photo Album

Reuse an old cereal box and recycled paper to make a special photo album.

Cut a piece of cardboard from an empty cereal box so that it is 4 1/2 inches tall by 13 inches wide. Decorate the cardboard with a sheet of recycled colored office paper (use one that is already printed on one side; you can turn it over so the clean side shows). Fold the cardboard in half to make the covers for a book (it will now be 4 1/2 inches by 6 1/2 inches).

As shown in the photo, fan-fold half of a piece of recycled office paper (starting size 4 1/4 inches by 11 inches), with each “fan” about 1/2 inch wide. Glue one end of the fan to the inside of the front cover, and the other end of the fan to the inside of the back cover. Glue it as close to the spine as possible. Now you are ready to glue or tape your 4-inch-by-6-inch photos to the fans to complete your book.



Personalized Reusable Grocery Tote

Parents (and kids) will have fun using these bags they decorate themselves.

Purchase plain reusable grocery totes. (Nonwoven bags are available through various Internet suppliers for about \$1.50 each.) They can be decorated using traditional permanent markers, glitter pens, etc.

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Watt's Up?

What you'll need:

- A watt meter (it's easy to get one at no to low cost—borrow one from your local utility company or ask around to see whether someone in your community will lend theirs. You can also buy a watt meter online or from your local hardware or home improvement store for as little as \$30)
- Various common electrical items, such as a hair dryer (highly recommend), toaster, laptop computer, DVD player, etc.
- Two desk lamps—one with a 60-watt incandescent bulb, the other with a 13-watt ENERGY STAR® qualified compact fluorescent light bulb (CFL)
- A charger for a home product, such as a handheld vacuum, cordless drill, digital picture frame, or digital camera dock (the larger and heavier the “brick” that gets plugged into the wall, the better)
- Prizes for those who correctly guess product wattages

How it works: The activity leader plugs each product or device into the watt meter. Everybody takes note of the watt reading. Note how the readings change depending on the device and setting. Follow this same process for comparing energy-efficient and non-energy-efficient versions of the same product (for example, an ENERGY STAR CFL bulb vs. an incandescent light bulb; a laptop computer asleep* vs. a laptop computer in use; an ENERGY STAR qualified holiday light string vs. a standard holiday light string). Finally, have the participants guess how many watts a charger uses when it's not charging a phone or other device but is left plugged into the wall.

What you'll learn: There are many “hidden” electrical devices in our lives that use energy even when they're not in use. There are also ways to use less energy without sacrificing performance from an appliance or device. Remember to turn off devices when not in use, enable power management on computers, and unplug chargers when you're not actually charging your phone or other device. You can also consider using a power strip as an easy way to turn off devices when you're not using them.

Variations: Add an element of competition to this activity by asking the group to predict the difference in watt usage between a light fixture with an incandescent bulb and one with a CFL. If you have a hair dryer at your event, do the same for the difference in watt usage between the hottest and coolest heat settings on a hair dryer. Award a prize to the person whose guess is the closest.

* If volunteers will be power managing a computer (“sleep mode”), these instructions will help:

For most Windows systems: From Control Panel click on “Performance and Maintenance” and select “Power Options.” To put the computer to sleep, select “change when the computer sleeps” and set it to go to sleep in 1 minute.

For most Apple systems: From System Preferences click “Show All” (if necessary) and select “Energy Saver” from Hardware row. Use the slider to put the computer to sleep.

Use a watt meter to dramatically demonstrate how much energy different home products use, and how usage varies at different settings.



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Trash or What? Relay Race

Have players rush to deposit the index cards showing unwanted items into the correct bin.

What you'll need:

- Two sets of 20 index cards labeled with typical items destined for the trash, recycling bin, or compost heap (each set of game cards should be a different color)
- Three boxes, one each marked "Recycle," "Trash," and "Compost"
- Tables to hold boxes and cards

How it works: Place the boxes on a table some distance away from the players. Players form two lines. Separate the game cards by color. Assign a card color to each team and place a pile of game cards face down on a table next to each line. The first player in each line picks the first card from his stack, runs to deposit it in the correct box, then runs back to the line and tags the next player who does the same. The winning team places the most cards in the correct boxes in the least amount of time.

What you'll learn: Reusing, recycling, and composting all save energy and resources. Many household items can be recycled or composted.

LIST OF ITEMS

Note: Check with your local trash and recycling office to see what items you can recycle in your community.

Compost

banana peel
apple core
grass clippings
eggshells
coffee grounds
wilted flowers
potato peels

Trash

candy bar wrapper
disposable diaper
wet paper towel
used paper plate
disposable foam
drink cup
incandescent light bulb

Recycle

cereal box
newspaper
scrap paper
pasta box
plastic milk jug
plastic water bottle
soft drink can



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One-Minute Energy Stars!

Reinforce ENERGY STAR® and Go Green Night messages through fun, engaging activities for families.

Overview: Participants rotate through six different 60-second games on their quest to become Energy Stars. Awards and/or prizes are given at the end of the event for completed activities.

Materials:

- Energy Stars passports for each participant
- 60-second timing device for each station
- Other station-specific materials (see activity sheets for details)

Description: There are six different activities, each lasting 60 seconds. Participants receive an Energy Stars passport at the start of the event. The passport has one space for each of the six activities. Participants receive a score and/or a star for completing each activity. At the end of the evening, all completed cards are collected and one is drawn to win a door prize. You might also consider recognizing students who earn the highest scores for each game.

1. **Dry the Laundry:** Hang your clothes on a clothes line.
2. **Turn Off the Lights!:** Roll a golf ball from “room” to “room” on a sheet of insulation board.
3. **Pipe Insulation Puzzle:** Use pieces of foam insulation to insulate a three-foot PVC pipe.
4. **Warm Up/Cool Down Automatically:** Sort colored cups to show how a programmable thermostat works.
5. **Short Showers Save Gallons:** How many gallons of “hot water” will you use in 60 seconds?
6. **Memory Master Matching Game:** Find pairs of energy efficiency tips among the cards.



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Dry the Laundry!

Save energy by using wind power, not your clothes dryer, to dry your laundry.

Object of the game: Successfully hang up the laundry within one minute.

Materials:

- 12 spring clothespins, numbered in pairs from 1 to 6
- 6 pieces of assorted clothing
- 10 to 20 feet of clothesline, depending on your room's setup
- Something to mark a starting line on the floor, such as masking tape

Setup: Tie each end of the clothesline to a railing or other anchor point. As an alternative, have adult volunteers hold the ends. Put all the clothespins in a bag or small box. Put the clothing into a laundry basket at the "Go!" line.

How to play: Within one minute, hang three to six pieces of clothing on the clothesline (depending on the age of the participant) using the spring clothespins. Clothing must remain hanging until time expires.

Optional: For older children, require them to use matching numbered clothespins for each piece of laundry.



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Turn Off the Lights!

Remembering to turn off unused lights (and appliances!) when you leave a room saves on electricity consumption.

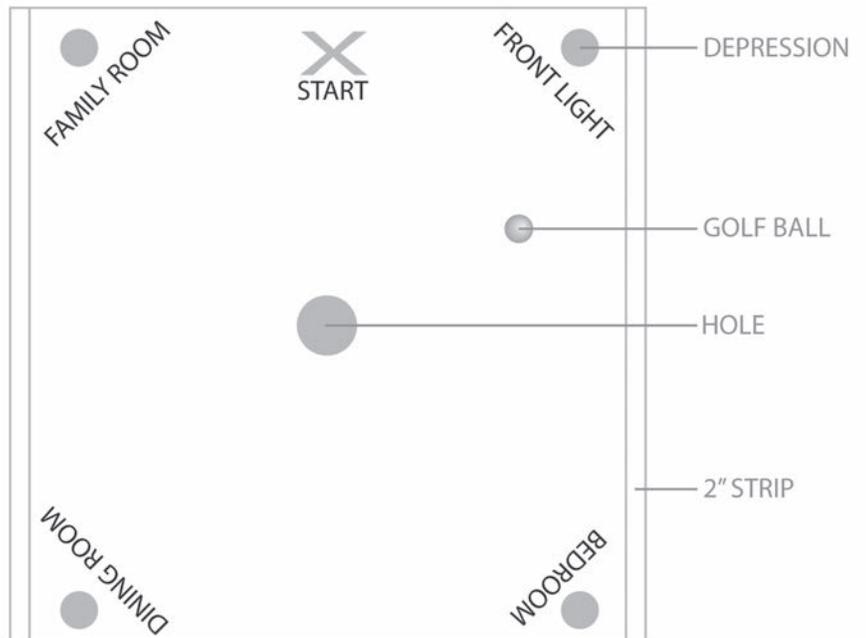
Object of the game: Roll the golf ball from “room” to “room” and then through the center of the game board to successfully turn off all the lights.

Materials:

- One 4-foot-by-4-foot piece of half-inch-thick rigid foam insulation panel (half sheet, about \$6)
- Golf ball

Setup: Cut a strip 2 inches wide from opposite sides of the board. Glue these strips to the edges of the board to keep the golf ball from rolling off the sides. Create four depressions in the foam, one at each corner, large enough to hold the golf ball but shallow enough so the ball can roll out. (A grapefruit spoon works well for this task.) Cut a complete hole in the center of the foam sheet. Decorate the foam board as shown. Don’t forget to mark “start” toward the middle point of one of the open sides.

How to play: Players (parent and child) each hold one end of the game board. The golf ball starts on the marked spot. Players work together to tilt the board so the golf ball moves from “room” to “room.” When the golf ball has visited every room, players work to roll it through the opening in the center of the board. Players score 1 point for each room visited and a bonus of 10 points if they complete the game within 60 seconds.



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Pipe Insulation Puzzle

Insulating hot water pipes keeps water 2 to 4 degrees hotter so you can turn down the setting on your hot water heater.

Object of the game: Properly insulate your pipe within one minute.

Note: We are using PVC pipe for safety. Foam insulation would normally be used only on metal pipe.

Materials:

- 6-foot section of lightweight foam pipe insulation, sized for a 1½" diameter pipe
- 4-foot section of ½" PVC pipe
- Razor blade cutting tool (box cutter)—(keep out of reach of children)
- Yardstick



Setup: Using the razor blade tool, cut the 6-foot section of pipe insulation into two equal pieces, each 36 inches long. Cut each 36-inch piece into various smaller pieces, making each cut a whole number of inches. Range your pieces from 1 inch to 9 inches.

On the PVC pipe, use two strips of duct tape to mark a distance of 36 inches, leaving 6 inches at each end.

How to play: A parent holds the pipe by one end. A child slides pieces of foam insulation onto the pipe until the pieces exactly fill the 36-inch space marked on the pipe. The child may need to slide pieces off and replace them with pieces of another size to get it to fit just so.

Optional: For older children, require them to use a certain number of pieces to fill the 36-inch length.



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Warm Up/Cool Down Automatically

Programming a thermostat correctly can save about \$180 a year in energy costs.

Object of the game: Successfully sort colored cups according to the time of day to demonstrate how a programmable thermostat automatically controls the temperature of your home.

Materials:

- 8 red plastic cups
- 16 blue plastic cups
- Black permanent marker

Preparation: Turn the cups upside-down and label them as shown in the chart, using the black marker. The number inside the cup is the answer key. The label on the outside of the cup represents the time of day and the temperature settings for the house in wintertime.

CUP COLOR	INSIDE #	OUTSIDE LABEL	CUP COLOR	INSIDE #	OUTSIDE LABEL
Red	1	6 a.m., 70 degrees	Red	13	6 p.m., 70 degrees
Red	2	7 a.m., 70 degrees	Red	14	7 p.m., 70 degrees
Red	3	8 a.m., 70 degrees	Red	15	8 p.m., 70 degrees
Blue	4	9 a.m., 62 degrees	Red	16	9 p.m., 70 degrees
Blue	5	10 a.m., 62 degrees	Blue	17	10 p.m., 62 degrees
Blue	6	11 a.m., 62 degrees	Blue	18	11 p.m., 62 degrees
Blue	7	12 noon, 62 degrees	Blue	19	12 midnight, 62 degrees
Blue	8	1 p.m., 62 degrees	Blue	20	1 a.m., 62 degrees
Blue	9	2 p.m., 62 degrees	Blue	21	2 a.m., 62 degrees
Blue	10	3 p.m., 62 degrees	Blue	22	3 a.m., 62 degrees
Blue	11	4 p.m., 62 degrees	Blue	23	4 a.m., 62 degrees
Red	12	5 p.m., 70 degrees	Blue	24	5 a.m., 62 degrees



How to play: Start with the cups randomly arranged on the table, upside-down. Parent and child have one minute to successfully sort the 24 cups into a line, according to time of day, starting with 6 a.m. No peeking inside the cup for the answer key! The EPA estimates that if you set your thermostat for energy savings, you could save about \$180 per year (average US figures). Wow!

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Short Showers Save Gallons

A 10-minute shower uses 25 to 50 gallons of water. A typical bathtub, fully filled, holds 40 to 65 gallons of water. A short shower or shallow bath can save many gallons of water and reduce the amount of energy needed to heat the water. This activity builds awareness of how much water is used for a typical shower.

Object of the game: Cover the parent in as many gallons of “water” as possible.

Materials:

- 25 to 50 empty and clean gallon containers (milk or water jugs), caps taped on securely
- Yoga mat or similar

Setup: Lay the yoga mat on the floor. Collect the milk jugs in large bags or boxes nearby.

How to play: The parent lies flat on the ground on the yoga mat. The child stacks as many water jugs on the parent as possible in 60 seconds. No part of any jug may touch the mat. The parent may assist the child in any way, including raising arms/legs, holding on to the jugs, looping fingers through jug handles, etc. At the end of 60 seconds, the parent must hold position with all jugs off the ground for three seconds. The player receives one point for every jug held off the ground. A bonus of 10 points is added if the player successfully uses all the jugs provided.



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Memory Master Matching Game

Play this fun card-matching game to learn about ways to save energy and go green.

Object of the game: Try to find each pair of matching energy-saving tips from among the cards hidden on the table.

Materials:

- Set of Go Green Night Memory Master cards
- Table

Setup: Before the event, photocopy the Go Green Night Memory Master cards onto card stock, double-sided. Laminate them if possible. Cut the cards apart. Mix up the cards and lay them all facedown on the table.

How to play: A player selects two cards from the game board and turns them over. If there is a match, the player removes the pair from the table and continues to seek a new pair. If there is no match, the cards are turned back over in the same spot. The player continues to seek pairs of matching cards for 60 seconds, earning one point per pair and 10 bonus points if all the pairs are found in the time allotted.

Lessons on the cards include:

- Set a programmable thermostat
- Caulk gaps around windows
- Seal gaps in ductwork with duct mastic
- Insulate attic crawl spaces
- Seal around openings to the outdoors or attic
- Properly ventilate your attic
- Install storm windows in winter
- Run ceiling fans clockwise in winter, counterclockwise in summer
- Walk, ride a bike, or skateboard instead of using a car
- Reduce, Reuse, Recycle (3 R's)
- Keep doors and windows closed when the heat or air conditioning is on
- Plant trees to shade your house from the sun
- Turn off lights when you leave the room
- Replace incandescent lightbulbs with ENERGY STAR qualified CFL bulbs
- Unplug power chargers and adapters when not in use
- Plant a vegetable garden
- Use a power strip as a central turn-off point for equipment
- Fix leaky faucets and running toilets
- Use both sides of a piece of paper
- Read email messages on the screen, don't print them
- Look for the ENERGY STAR when purchasing products

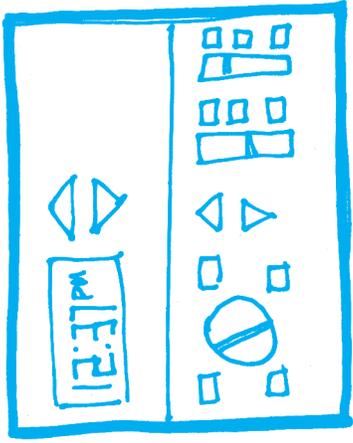


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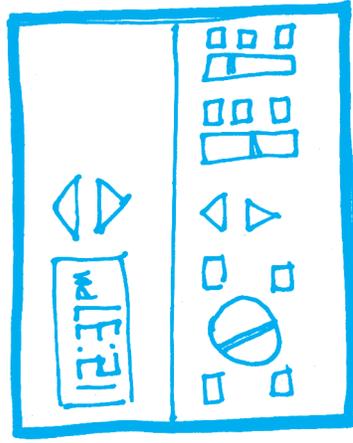


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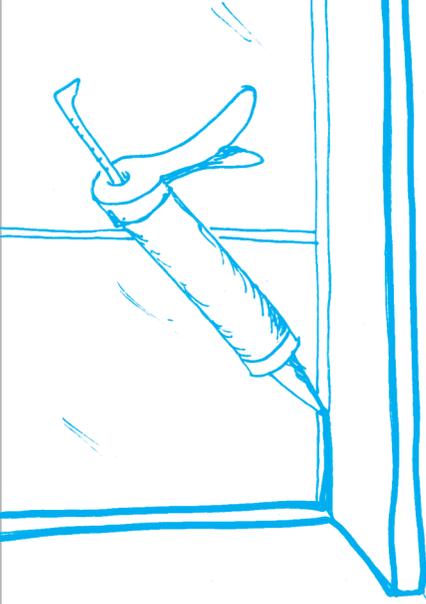




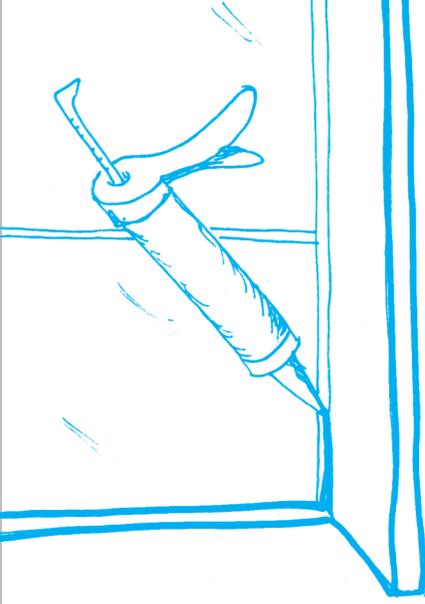
Set a programmable thermostat



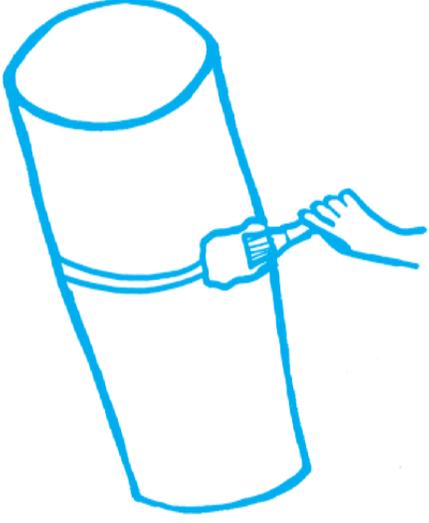
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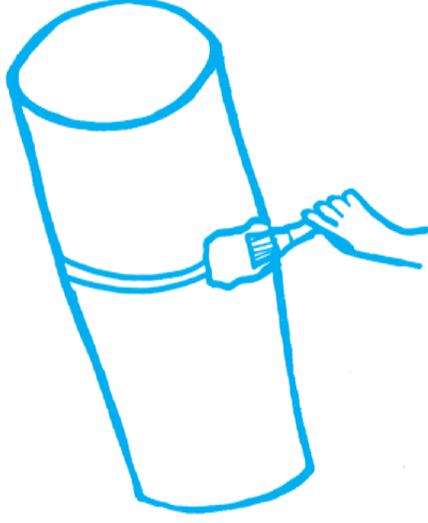
Caulk gaps around windows



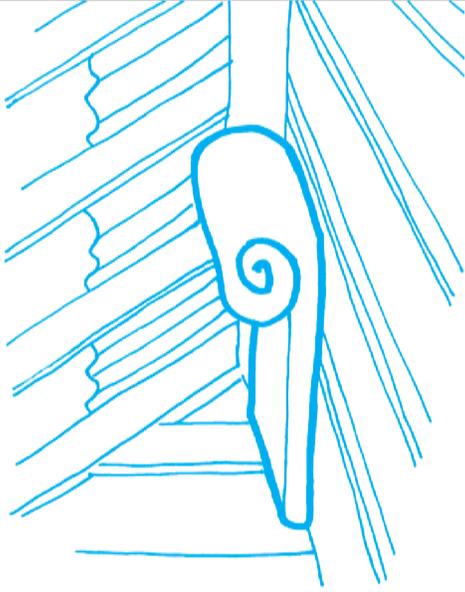
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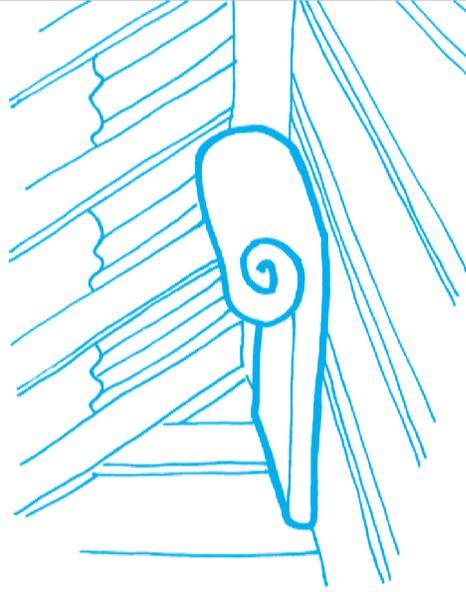
Seal gaps in ductwork with duct mastic



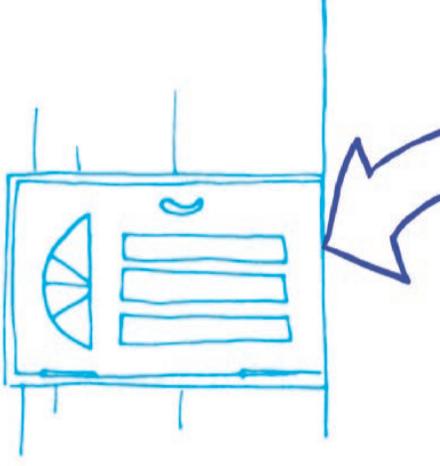
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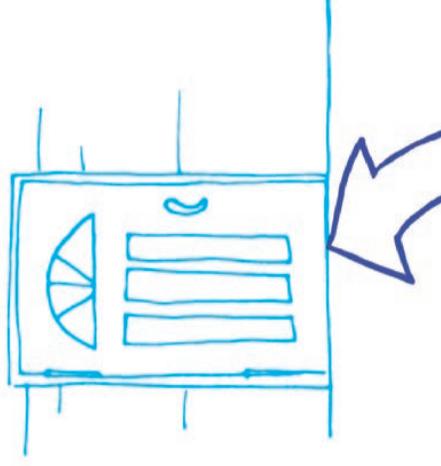
Insulate attic
crawl spaces



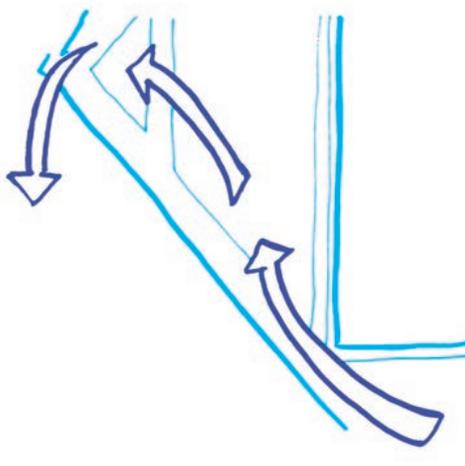
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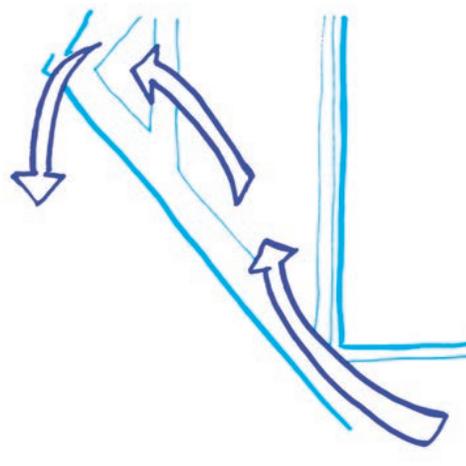
Seal around openings
to the outdoors or attic



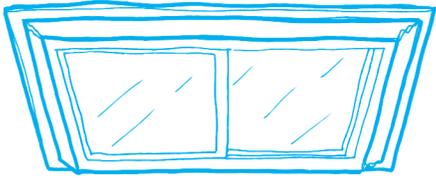
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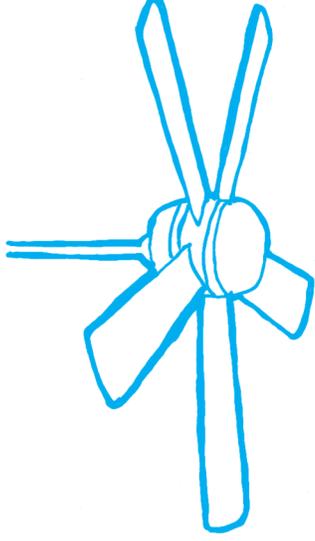
Properly ventilate
your attic



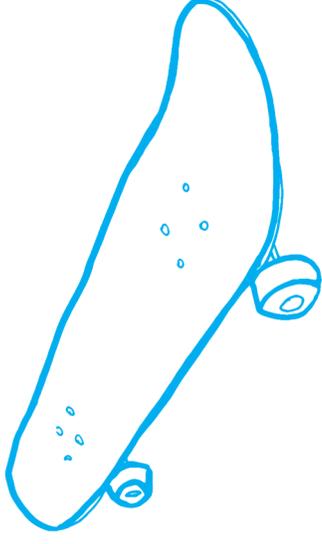
Properly ventilate
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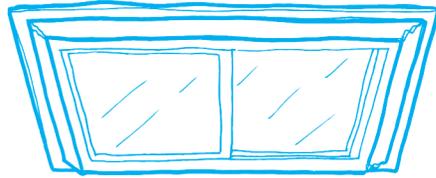
Install storm windows
in winter



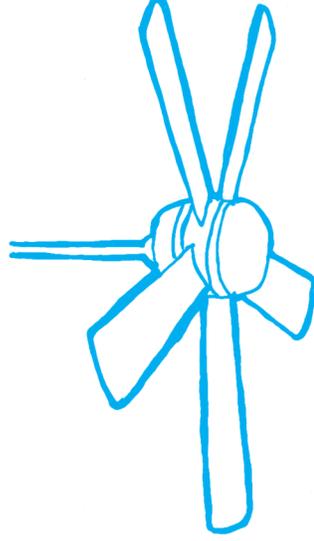
Run ceiling fans clockwise in
the winter, counterclockwise
in the summer



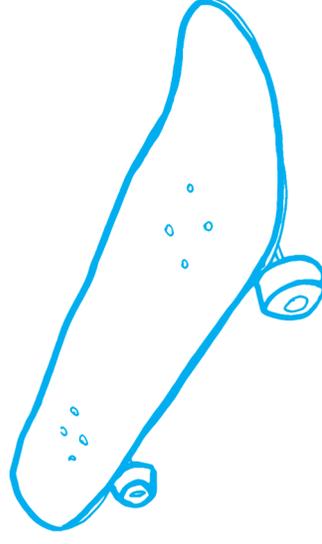
Walk, ride a bike, or
skateboard instead of
using a car



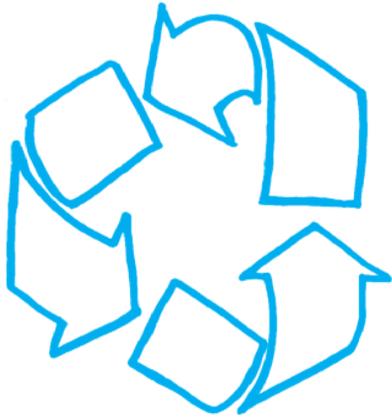
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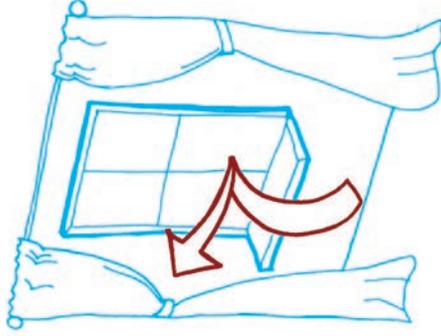
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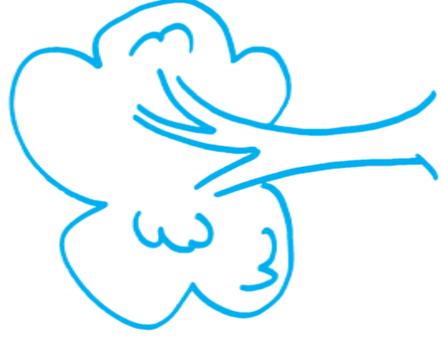
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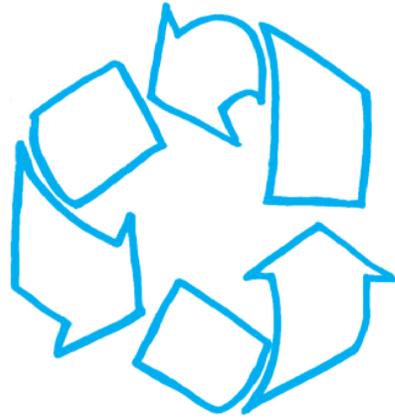
Reduce, Reuse,
Recycle (3 Rs)



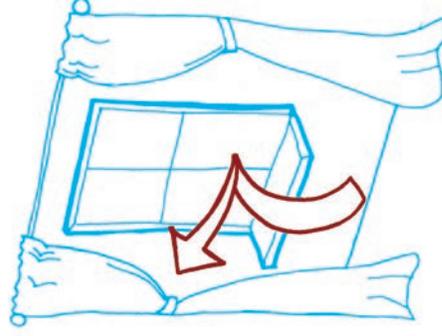
Keep doors and windows
closed when the heat or air
conditioning is on



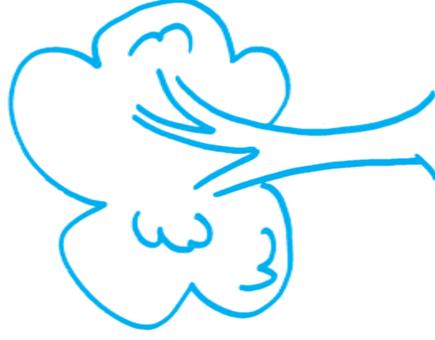
Plant trees to shade
your house from the sun



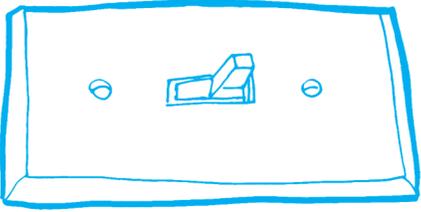
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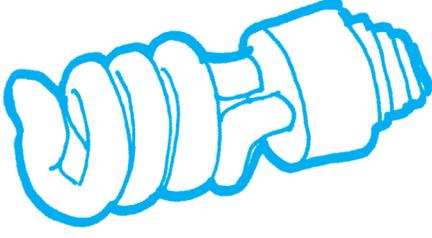
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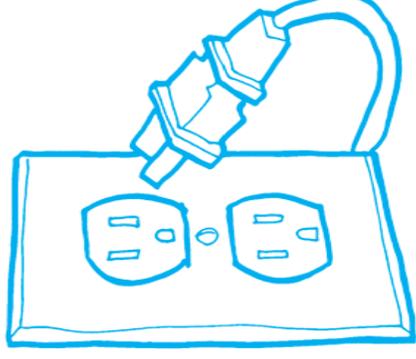
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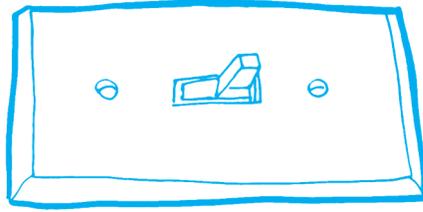
Turn off lights when
you leave the room



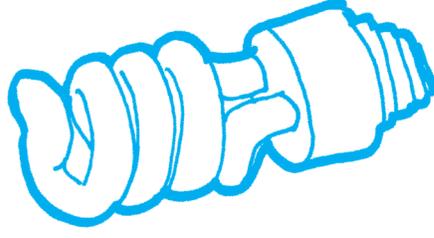
Replace incandescent
light bulbs with ENERGY
STAR qualified CFL bulbs



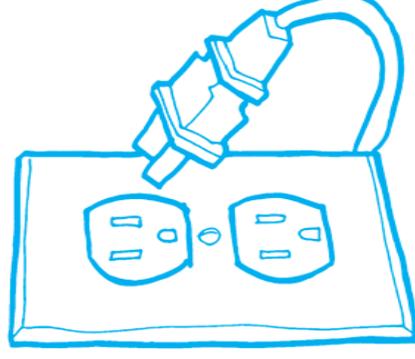
Unplug power chargers
and adapters when not
in use



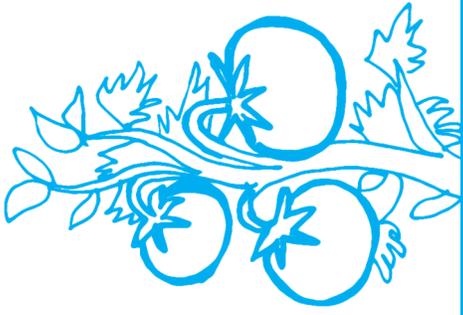
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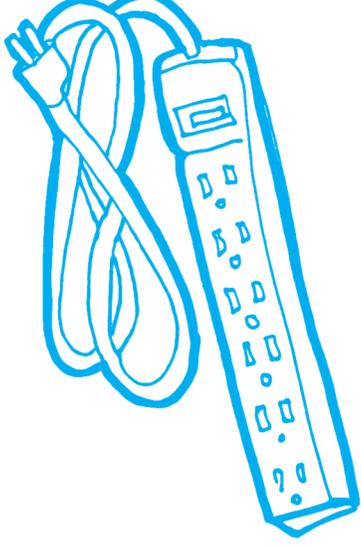
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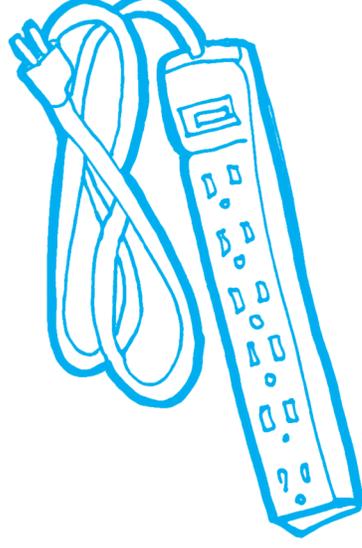
Plant a vegetable garden



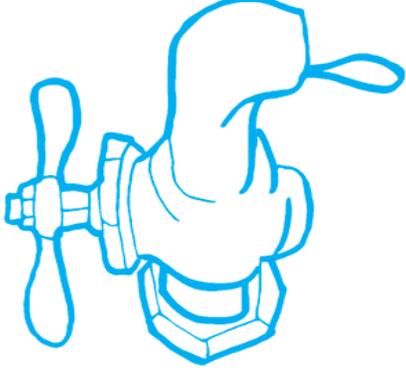
Plant a vegetable garden



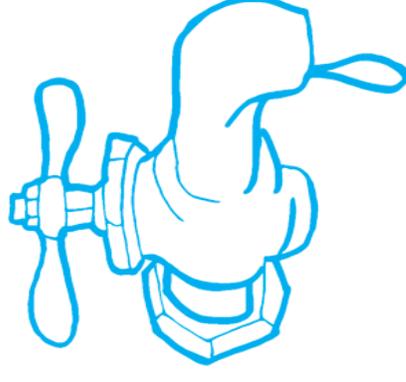
Use a power strip as
central turn-off point
for equipment



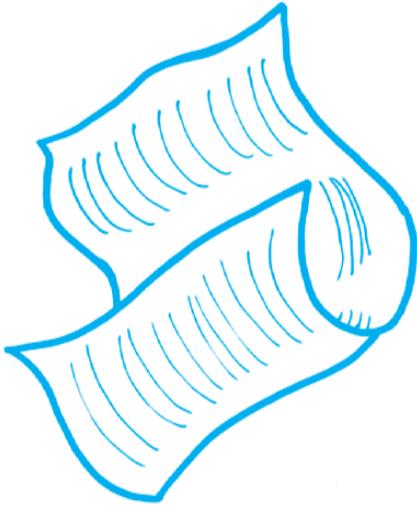
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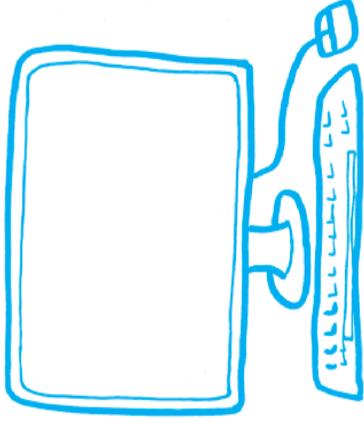
Fix leaky faucets and
running toilets



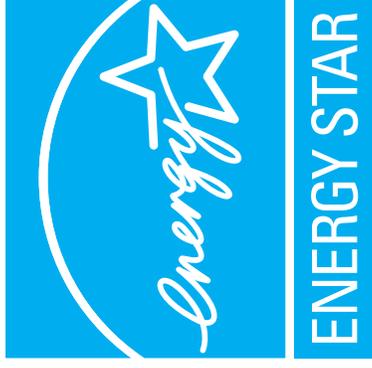
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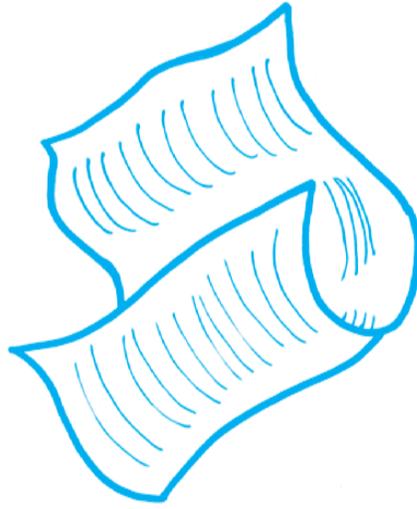
Use both sides of a
piece of paper



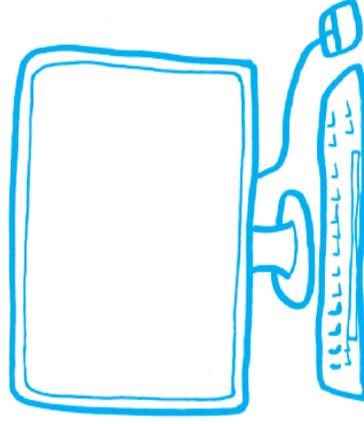
Read email messages
on the screen, don't
print them



Look for the ENERGY STAR®
when purchasing products



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