

Part 2

Home Energy Audits

Scavenger Hunt: Energy Stars

Let's identify some of the great (and not-so-great) appliances in your home. ENERGY STAR Appliances The US Environmental Protection Agency's ENERGY STAR Program helps you save money, protect the environment, and be energy efficient. ENERGY STAR certified appliances have undergone extensive testing and are proven to use less energy than a standard model, while still providing excellent performance. In 1992, ENERGY STAR has saved US homes and businesses nearly 4 trillion kilowatt-hours of electricity, reducing greenhouse gas emissions by over 3 billion metric tons. That is equivalent to the yearly emissions of over 600 million cars! Homes that use ENERGY STAR certified appliances save an average of \$575 per year. For more information, please follow this link: <https://www.energystar.gov> What appliances in your home have the ENERGY STAR label (shown below)? Check all that apply.










Appliance	Do you have this Appliance in your home? Yes/No?
Dishwasher	yes
Refrigerator	yes
Freezer	no
Clothes Washer	no
Clothes Dryer	no
Water Heater	yes
HVAC Unit	no
Dehumidifier	no
Air Purifier	no
Television	yes
Stove:	yes

Scavenger Hunt: Energy Vampires

Now that you've found the most energy-efficient appliances in your home, let's look for a few that waste energy.

Energy vampires – appliances that use energy even when they're turned off – are everywhere, and they cost Americans more than \$3 billion per year! You can stop them by unplugging them or by plugging them into a power strip that you can turn off when the appliance is not in use. However, just because you can unplug an energy vampire doesn't mean that you should. Unplugging your brother's computer or your parents' coffee maker might annoy them and make them less likely to follow your sustainability tips. Before you unplug something, explain what energy vampires are and why you want to unplug them, then ask permission.



Find the energy vampires in your home and determine whether you can and should unplug them!

Energy Vampire	Number in Your House	Can you unplug it?	Should you unplug it?
Phone Charger 	7	no	yes
Desktop Computer 	1	yes	yes
Laptop Computer 			
Game Console 	2	yes	yes
Coffee Maker 	1	yes	yes
TV 	3	no	A power Strip
Microwave 	1	yes	yes

Lighting Audit

Lighting Investigation

It's time to conduct a lighting audit of your home! Count the number of light bulbs in your household. Pay attention to if the bulbs are incandescent, CFL, or LED lights. Be sure to look in every room, including bathrooms, closets, garage and outdoor lighting.

Room	# of Incandescent Bulbs 	# of CFL Bulbs 	# of LED Bulbs	
Kitchen	1			2
Living Room	1			2
Bedroom 1		2		2
Bedroom 2	1			3
Bedroom 3		1		1
Dining Room				
Bathroom	1			1
Hallway	1			2
Add up the total # of each bulb in this row.	5	2		7

Lighting Investigation

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Room	# of Incandescent Bulbs 	# of CFL Bulbs 	# of LED Bulbs	Total # of Light Bulbs in Each Room
Kitchen	None	Maybe	Yes	9
Living Room	None	None	All	4
Bedroom 1	None	None	All	2
Bedroom 2	None	None	All	2
Bedroom 3	All	None	None	4
Dining Room	None	None	All	5
Bathroom 1	None	All	None	3 (working)
Hallway				
Add up the total # of each bulb in this row.				

HVAC Audit

HVAC Investigation

The biggest user of energy in most homes is the Heating, Ventilation and Air Conditioning (HVAC) system. Of course, this varies from home to home, so one of the first things you'll do is explore what kind of systems and controls you have. But whatever kind of HVAC you have, using it efficiently will help lower your energy costs and make your home safer and more comfortable.

1. Exploring Your HVAC System Look around your home. You may have more than one type of HVAC system. Check all that apply.

_____ Central HVAC system This type of system blows warm and cold air through ducts and out vents, like the one pictured here.



_____ Mini Split (or "Ductless") System These are similar to central HVAC systems, but the air comes out of wall- or ceiling-mounted air handlers instead of vents.



_____ Radiator Radiator Heating. This is a traditional heating technology that uses heated water--generated in a separate boiler--to warm your home.



___yes___ Baseboard Heater This form of heating runs along the bottom of walls (the "baseboards") and often uses electricity to heat a room.



_____ Space Heater These small units sit on the floor and use electricity to heat a room.



___yes___ Window Air Conditioner Window Air Conditioner. These units typically sit in a windowsill and are used to cool a room.



_____ Portable Air Conditioner These are similar to window air conditioners, but are made to sit on the floor.



___yes___ Ceiling Fans These fans help push warm air from the ceiling down in the winter; and can help keep cool air down in the summer.



_____ Floor Fans These can help keep you cool by moving air across your skin, and can also create cross-breezes that push hot air out and bring cool air in.



3. Saving Energy on HVAC! Now that you know what type of HVAC equipment you have, it's time to learn how to use it efficiently.

Check all of the strategies below you and your family plan to use.

no_____ Change your filters! If you have a Central or Mini Split system, you need to clean or change the filters regularly. Dirty filters will make your system work harder and waste energy. Clean filters also mean you'll be breathing cleaner air.



___yes___ Keep doors and windows closed when the HVAC is on! This sounds simple, but people often accidentally leave windows open, or leave the door open when entering and leaving the home. This wastes a lot of energy.



___no___ Look for leaks! Spaces under doors or cracks along windows are common problems. Your fingers and toes can tell if cold or hot air is coming in--and the solution can be as simple as a towel. 10



___yes___ Try passive heating and cooling! This is the opposite of "keeping doors and windows closed" and should be used in the opposite situation--when you're trying to warm or cold air OUT of your house. For instance, in the summer you might open your window in the evening to let hot air out and cool air in. Then in the morning, close them to keep the cool air in. Anytime you can use the outside temperature to make your house more comfortable, you will save energy and money.



___yes___ Watch your windows! There are many types of windows--from "single pane" windows (made up a single layer of glass or vinyl) to double- or triple-pane windows. The more layers, the more insulated they tend to be. If your windows are single pane, closing the curtains can help insulate your home.



2. HVAC Controls

Does your HVAC system have a thermostat? This allows you to set the temperature you want your room or home to be.

_____ Yes _____no___ No

If you do have a thermostat, is it manual or programmable?

___no___ Manual Thermostats These let you choose the temperature you want your HVAC to heat and cool to, but doesn't let you change that temperature over time.



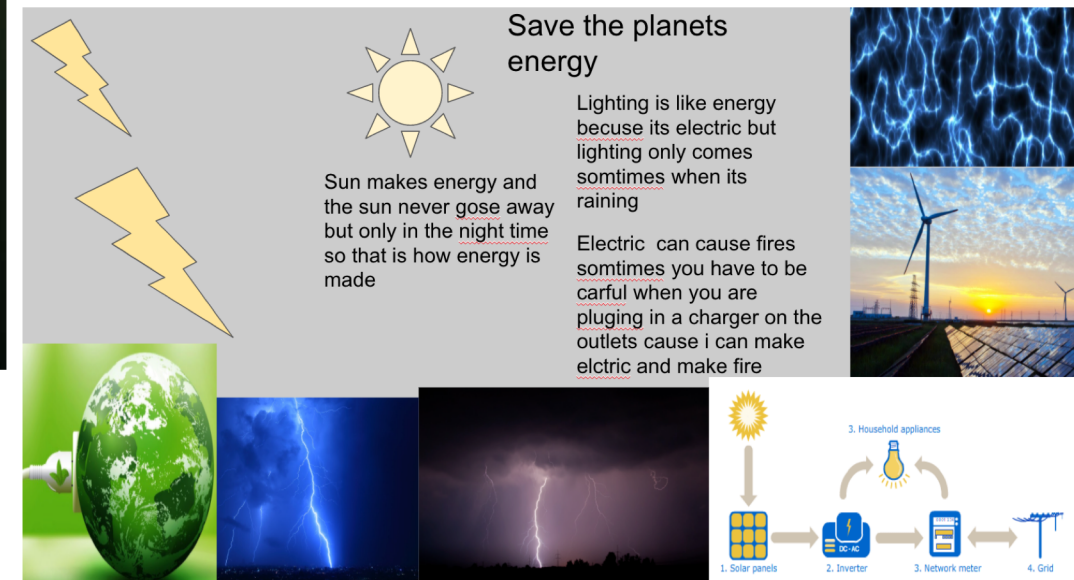
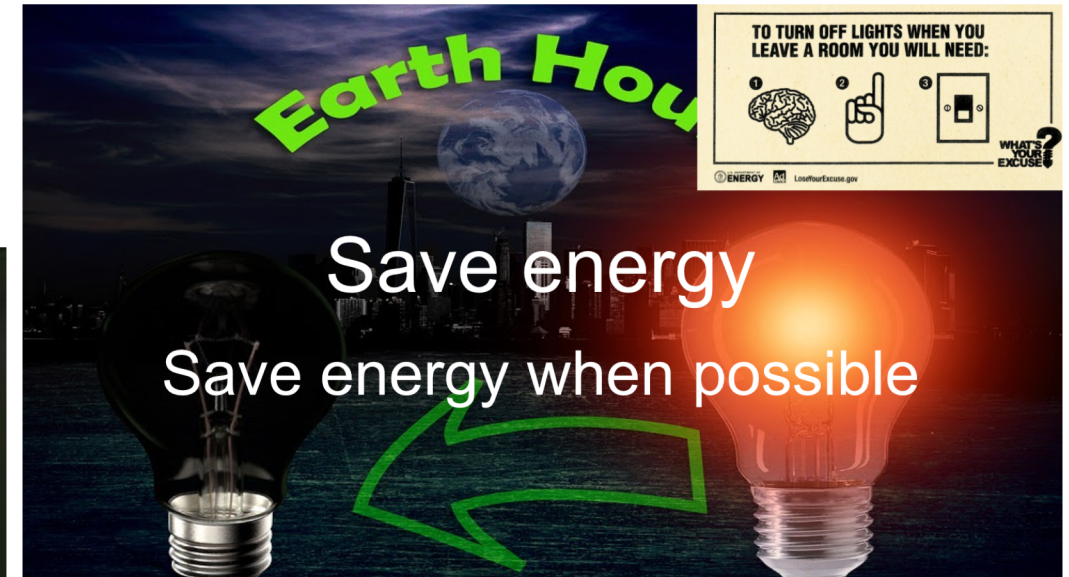
___no___ Programmable Thermostats These let you choose different temperatures for different times of day.



If you have a thermostat, what temperature is it set to heat to? _____ 60 cold _____

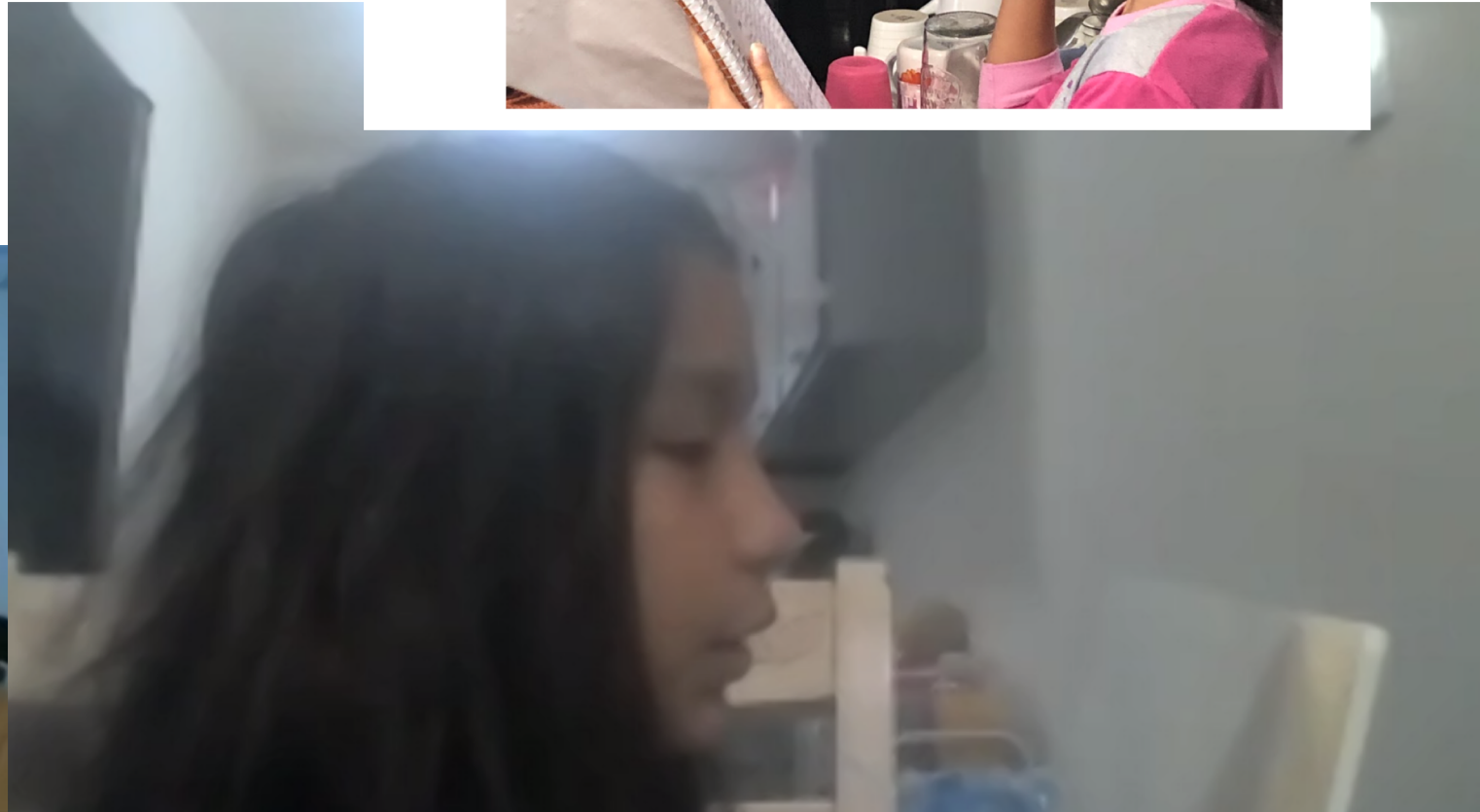
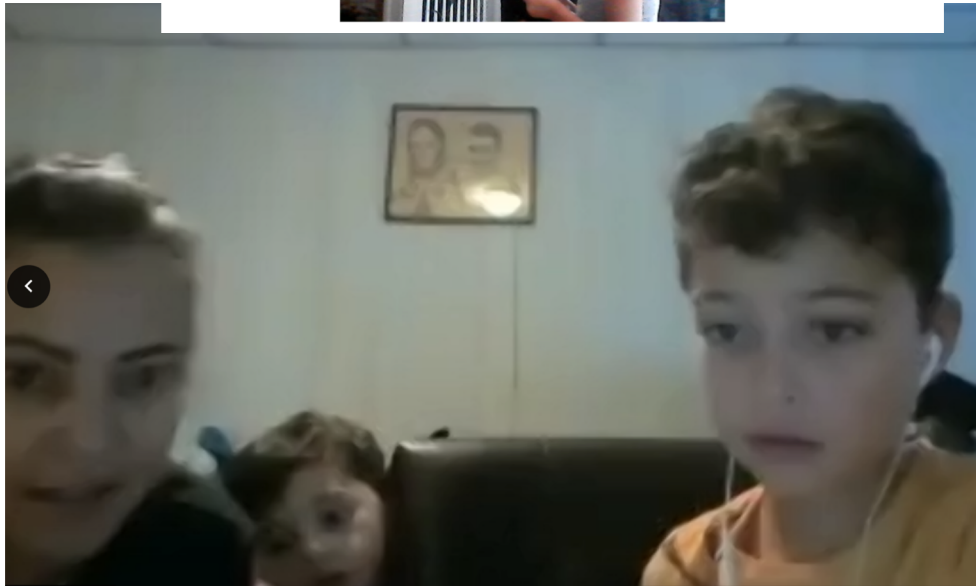
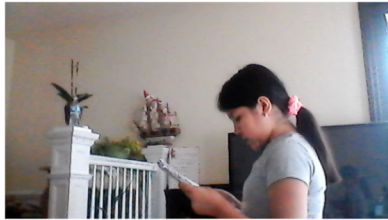
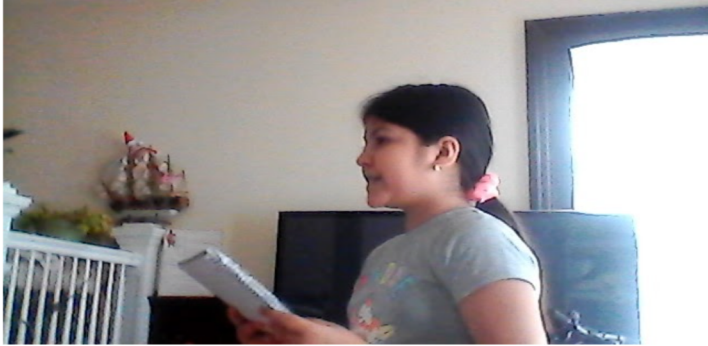
What temperature is your thermostat set to cool to? _____ 70 _____

Posters



Family Presentations

Add the photo of yourself giving your family the PowerSave presentation.



Tracing Energy Back to the Sun

