

Green Scavenger Hunt for Homes

"The earth is the Lord's, and everything in it, the world, and all who live in it; for he founded it upon the seas and established it upon the waters." (Psalm 24:1-2) (New International Version)

During a time such as Bible School, Sunday School or Youth Group plan a lesson around the topics of energy conservation, environmental stewardship and taking better care of this wonderful planet God has given us. Ask the young people what they are concerned about. Then announce that the young people can participate in an Energy Conservation Scavenger Hunt with their parents in their home. Remind the children that saving energy is good for the earth and good for saving money.

Living room:

Does your house have a fireplace – it can be a source of heat loss. While sometimes it's nice and warm, warm air can go right up the chimney when it's not in use. Ask your parents to make sure they close the damper when it's not in use and think about installing fireplace doors. Fires deliver heat through radiation, conduction and convection. Sunshine is a form of radiation too. When you are near a fire, it can feel like being out in the sun. Air passing through a fire delivers heat by convection. It also delivers smoke. Conduction occurs when metal comes in contact with a fire. A fireplace must not deliver smoke to the space it warms, so all the air directly warmed by the flames has to be vented out through the chimney. An open fireplace uses air from the room it is in to burn wood. Air heated by the house's furnace is actually swept up the chimney. A well-made fireplace has glass doors and an opening to the outside for combustion air. It may also have a heat exchanger. The heat exchanger allows the smoke to go up the chimney and warm air to move into the house.



Thermostats:

What is a thermostat and what does it do? Who controls the thermostats in your home? Are they turned down in the winter and up in the summer (if there is air conditioning)? Are your thermostats programmable so that they are doing this automatically? A thermostat is like a person's skin. It can feel what the temperature is. It is also like your brain. It remembers what temperature is comfortable and tells the furnace or air conditioner when to run. Sometimes thermostats are really smart and can be taught when to change the temperature in the room when people are going to be there. Those types of thermostats are called programmable. Those thermostats help to save the energy that no one



will be around to use. What temperature is your family comfortable at in the winter? What temperature are they comfortable at in the summer? Consider changing your thermostat to a programmable one. When you are not at home or asleep keep the thermostat turned down in the winter and up in the summer.

Basement:

The water heater - this is one of the biggest energy users in the home! If yours is more than a few years old have your parents wrap it with a special insulating blanket. This can save \$20 each year if you heat with natural gas or \$50 if you heat with electricity. But follow all the safety instructions. To see if your tank needs an insulation blanket, have your parents check to see if it feels warm on the outside; if so it needs a blanket. If you purchase a new water heater look for the Energy Star logo. If you can afford it, buy a tankless water heater sized properly for your home. It is also good if your water heater is close to where the water is used. That way water heated by the heater does not cool down in the pipes when it is waiting to be used. How far is it between your showers, sinks, clothes washer and the water heater? If you are getting a new one it may be possible to shorten the distance.



Furnace:

Change the filter regularly and have your furnace and central air checked and tuned up once a year for safety and saving energy. If your furnace is gas, see if you can find the label that says how much gas it burns in one hour and how much heat it produces. The amount of heat produced divided by the gas input is the combustion efficiency. Older furnaces have efficiencies as low as 75% or less. Modern furnaces have efficiencies as high as 95%. Look at your gas bill. See how much 15 to 20% better efficiency will save your family.



Doors and windows:

Turn off the lights and look at the frames around doors to the outside and windows. Can you see any daylight showing? If it is winter, place your hands around the edges. Can you feel cold air leaking in? Can you measure the length and width of the crack? Multiply the width x the length. See how many square inches of opening there is. Ask your parents if they knew there was a hole that big around the door. What could your family do to eliminate or reduce these leaks? How will this help save energy? How many panes of glass do your windows have, single pane with storm windows, double pane, or double pane with special gas between the panes or special film? What is weatherstripping, does your house need some in places? Replace weatherstripping where it is worn or missing around doors, garage doors and other places.



Water usage:

Does your family purchase water from the city or does it have its own well? What does your family use water for: watering the lawn or garden, showers and baths, toilets, sinks in the bathroom and kitchen, dishwasher, laundry, other? How can your family use less water? Is it feasible to collect rain water and use it for some purposes? If you replace your washer can you pick a front load style that uses much less water? Are any faucets leaking? Can you hear or see the toilet running?



Has there ever been a time when someone has forgotten to shut off the water at a sink? Try to remember what running water sounds like. Young ears hear better than older ears. Sometimes people do not always remember whether they shut the water off after they washed their hands. You can save water by shutting the water off for them. A faucet can use about \$.70 of water for every hour it is left on.

Hot water:

The sink and shower - did you know that the sink and the shower use the most water in your home? It takes a lot of energy to heat up water for your home, so try not to waste hot water. Take 5-minute showers and encourage your family to do the same. A fun experiment is to measure how fast water comes out of your showerhead. Use a measuring cup to measure out a gallon of water into a plastic bucket. There are 16 cups in one gallon. Mark the water level with an indelible marker. Water plants with the water.



Then carefully hold the bucket under a showerhead and see how many seconds it takes to fill the bucket up to the one gallon mark. You may need some help doing this. A gallon of water weighs 8.33 pounds. If it takes less than 22 seconds to fill the bucket, a lot of energy can be saved by switching to a showerhead that uses less water.

Kitchen:

Does your family use paper plates, paper napkins or plastic cups? It is better for the environment if they use "real" dishes and wash them. Does your family recycle cans, bottles and clean paper? What other items can be recycled? Can you recycle items from other rooms in the house? Can you start a compost pile? What are some other ways your can be "greener" in the kitchen?



Refrigerators - of all the places in your home, this is the worst "energy hog." If your fridge is more than 10 years old, odds are

a new one would pay for itself in energy savings. And make sure your parents look for the ENERGY STAR® label. Do you have a second old refrigerator sitting in the garage or somewhere else at home? If so, urge your parents to get rid of it. They can cost \$120 each year on your energy bill. Remind your parents that one large fridge is better than two smaller old ones. If the extra refrigerator is in a hot garage or enclosed porch it takes even more energy to keep the inside cool.

Lighting:

Light bulbs and lighting can be big energy users in a home. Is someone turning off the lights when no one is in a particular room? What type of light bulbs is your family using? Could they switch to more energy efficient ones? Count how many light bulbs are in each light fixture. Find out what the size is of each bulb. Figure out how long the lights are left on. This is all good information to know when you want to save energy. If your home had a light fixture with six 60-watt bulbs, the electricity cost to illuminate that fixture would be about 3.6 cents per hour. Can you figure out the hourly cost if 13 watt compact fluorescent bulbs are used to replace the 60 watt bulbs – they give off the same amount of illumination?



Attic:

Be careful and only go with an adult. Insulation in your attic is like when you wear a sweater. In the winter it traps the heat in your home and keeps it warmer while your parents spend less money on fuel. In the summer it keeps the air cooler. Can you see any daylight that indicates a hole around the chimney or an air duct or other places? Measure how many inches of insulation are on the floor of the attic – can your family invest in more insulation to bring the depth up to 12 inches? Leave room for air to circulate at the edges. This is very important so that moisture will ventilate from the attic above the insulation. Proposed codes may require even more insulation in the attic. Think about installing an exhaust fan that runs on a thermostat that turns it on automatically when the attic gets hot in the summer.



Outdoors:

Look around your driveway and lawn – can you think of a few final suggestions to help make your yard kinder to the environment, save energy and take better care of God’s earth? Do you have leaking outdoor faucets? Could you water flowers and trees with rainwater? Do you have ornamental lights? Do you have an outdoor light that is on when few people are around to see it? How is your lawn mowed or your snow cleared? What is used to make sidewalks less slippery in the winter?



Pick a date for the young people to bring back their results. What changes did the family decide to make as a result of the scavenger hunt? What things did the family decide would be too uncomfortable or unrealistic? Pledge to live a "greener" life. Even small changes can add up if more people get "on board."

If you need extra help contact the energy consultant at the Presbytery of Great Rivers.