

HOUSTON MUSEUM OF NATURAL SCIENCE

SCOUTS@HMNS

Energy Merit Badge Prerequisites

Scout's Name: _____ Unit: _____

REQUIREMENT 4

Conduct an energy audit of your home.

Attic

- Insulation - Is there enough insulation between ceiling joists?
- Vents - Sufficient and unobstructed?

Living Areas

- Air Leakage - Tape a foot of toilet paper to a pencil with paper hanging free. Hold near windows and doorframes, window air-conditioning units, and electrical covers. If paper moves, you may need weatherstripping, caulking, or storm windows.
- Wall Insulation - Are the wall too cool to the touch on a cold day or too warm on a hot day?
- Thermostat - Set at 68 degrees in winter (turn down 5 degrees more when sleeping), 78 in summer.
- Drapes - During winter, open drapes and shades to let sunlight in. Close at night. During the summer, close drapes.
- Unused Rooms - Close heating and cooling vents, doors in areas seldom used.
- Use fans instead of air conditioning when possible. Fans can also help circulate air when the air conditioning is on.

Fireplace

- Close the damper when fireplace is not in use. Glass doors keep heat from escaping up the chimney.

Kitchen

- Refrigerator/Oven Seal - To test, close a dollar bill in the door. If the bill moves with little resistance, the seal is bad.
- Appliances - Use washers and dryers in the morning and late evening hours when energy requirements are lower.
- Lights - Turn off lights when not used. Install lower wattage and fluorescent light bulbs whenever possible.
- Faucets do not drip.

Basement/Crawl Space

- Heating/Cooling System - Clean or replace filters monthly. Have unit serviced once a year.
- Water Heater - Set temperatures no higher than 120 degrees. Drain sediments 3-4 times a year.
- Ducts/Pipes - Insulate hot water pipes as well as heating and cooling ducts.
- Floors - If you have a crawl space under your house, install batt-type fiberglass insulation under floors.
- Venting - Washer & dryer units should be vented directly to the outside.

Outside

- Weather Stripping & Caulking - Caulk the cracks around windows, weather-strip around doors.
- Windows - Storm windows and double-paned glass can reduce energy usage up to 15%.
- Doors - Keep doors tightly closed on hot or cold days.

Storm Doors - Help insulate doors

Keep a 14 day log that records what you and your family did to reduce energy use. Include the following in your report and, after the 14 day period, discuss what you have learned with your counselor.

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PREREQUISITE

4a) List the types of energy used in your home such as electricity, wood, oil, liquid petroleum, and natural gas, and tell how each is delivered and measured, and the current cost;

Type of Energy	How it is delivered	Measured	Cost

OR record the transportation fuel used, miles driven, miles per gallon, and trips using your family car or another vehicle.

Transportation fuel used	Miles driven	Miles per gallon	Number of trips