

scouts@HMNS

Energy & Sustainability Merit Badge Prerequisites Worksheet

Scout's Name: _____

Unit: _____

Energy Prerequisites 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 weather-stripping, caulking, or storm windows.
- Wall Insulation - Are the walls 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.

1.
2.
3.
4.
5.
6.

14.

Include the following in your report and, after the 14 day period, discuss what you have learned with your counselor.

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

4b. Describe ways you and your family can use energy resources more wisely. In preparing your discussion, consider the energy required for the things you do and use on a daily basis (cooking, showering, using lights, driving, watching TV, using the computer). Explain what is meant by sustainable energy sources. Explain how you can change your energy use through reuse and recycling.

Sustainability Prerequisites

Requirement 1

Before starting work on any other requirements for this merit badge, write in your own words the meaning of sustainability.

Explain how you think conservation and stewardship of our natural resources relate to sustainability.

Have a family meeting, and ask family members to write down what they think sustainability means. Be sure to take notes. You will need this information again for requirement 5.

Requirement 2 - Water A

Develop and implement a plan that attempts to reduce your family's water usage.

As a family, discuss water usage. To aid in your discussion, if past water bills are available, you may choose to examine a few.

As a family, choose three ways to help reduce water consumption.

1.
2.
3.

Implement those ideas for one month. share what you learn with your counselor, and tell how you think your plan affected your family's water usage.

Requirement 2 Food A

Develop and implement a plan that attempts to reduce your household food waste.

Establish a baseline and then track and record your results for two weeks.

Report your results to your family and counselor.

Energy. Do either B or C

Part B

Develop and implement a plan that attempts to reduce consumption for one of your family's household utilities.

Examine your family's bills for that utility reflecting usage for three months (past or current).

As a family, choose three ways to help reduce consumption and be a better steward of this resource.

1.
2.
3.

Implement those ideas for one month. Share what you learn with your counselor, and tell how your plan affected your family's usage.

Part C

Evaluate your family's fuel and transportation usage.

Review your family's transportation-related bills (gasoline, diesel, electric, public transportation, etc.) reflecting usage for three months (past or current).

As a family, choose three ways to help reduce consumption and be a better steward of this resource.

1.
2.
3.

Implement those ideas for one month. Share what you learn with your counselor, and tell how your plan affected your family's transportation habits.

