

Home Energy Audit for Middle/High School Students (12/15/08)

1. Can you feel cool air movement around windows? Yes No
If yes: Which windows?
2. Can you feel cool air movement around doors? Yes No
If yes: Which doors?
3. What type of heating unit is used? **May need to ask a parent**
 - A. Wood stove
 - B. Forced air furnace (heated by oil, natural gas, electricity, wood)
 - C. Hot water heater (baseboard or radiator)
4. If you chose B—forced air furnace, check to see if: (i) it has a filter, ii) filter is clean
5. If you chose C—hot water heater, are your pipes insulated? Yes No
6. Go to each room in the house. Are any rooms much warmer or cooler than the room with the thermostat on the wall? Yes No
Can you determine why? Check for:
 - Leaky windows
 - Leaky doors – be sure to check under door
 - No heat register or heat is not coming out of register
 - Wall is cold to the touch (poor/no insulation)
 - There are holes in the floor
 - Leaky electrical outlets
7. What types of light bulbs are in used in the house? Circle one
Incandescent Compact Fluorescent (CFL) LED Tube Fluorescent
8. Do you see large icicles or ice on the edge of the roof indicating heat loss (poor insulation) in the roof? Yes No
9. Look at exterior landscaping. Are there trees on the north or west side of the house to block the wind? No Yes Are there trees on the south and west side of house blocking the heat gain? No Yes
Describe:
10. Does home have a programmable thermostat? No Yes
11. What is the age of home appliances?
Water heater Furnace Refrigerator Chest freezer
Hot Tub Television Other:
12. Efficient water use:
Does home have low flow toilets? No Yes
Does home have low flow showerheads? No Yes
Does home have front-loading clothes-washing machine? No Yes
Does home have Energy Star dishwasher? No Yes
13. Are water pipes and water heater properly insulated?

Vocabulary of home energy use:

- Thermal envelope
- R-value
- Heat sources—combustion boiler, propane/oil burner
- Appliance
- Single, double, triple pane windows
- Air leaks
- Insulation types
- Water heater
- Crawl space vs. basement
- Floor joist
- Rim joist
- Weather strip—plastic , rope, caulking
- Duct
- Baseboard
- Electrical outlet
- Water pipes
- Flashing
- Window covering

Home Energy Audit Checklist

1. Chimney – flashing, insulation, gaps
2. Is there recessed lighting in highest ceiling (cathedral ceiling)
3. Evaluate lights (change to CFC)
4. Check crawl space to close vents, put in plastic
5. Check programmable thermostat
6. 20+ year old appliances—replace with Energy Star appliances (Water heater, furnace)
7. Electricity hogs consumers—chest freezer, water bed, hot tub, big screen TV
8. How long do you take a shower?
9. Sill seal
10. Check the water pipes and water heater for proper insulation?

Safety ~ Beware of

- CO poisoning ☉ Asbestos

Think about the building envelope. Sketch it

Is there a seal between the basement and 1st floor?

Is there a seal between the upper floor living space and the roof?

