


# Home Energy Investigations

**Purpose:** To use tools and data to measure your household's energy use

Name \_\_\_\_\_

Date \_\_\_\_\_

Room \_\_\_\_\_

**Instructions:** First, read the  energy booklet in your Home Energy Audit Kit, then use the tools to complete the investigations below. Ask an adult before making any changes or unplugging appliances.

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## Home Heating and Thermostats

1. Locate your thermostat and record the setting. **Temperature:** \_\_\_\_\_ **degrees Fahrenheit (°F)**

2. If your thermostat was not at the recommended setting did you adjust it?

Yes  No  Thermostat was set to recommended temperature  Thermostat not accessible

Recommended Thermostat Settings	Heating	Cooling
When you are home:	68°F	78°F
When you are not at home:	55°F	85°F
When you are sleeping:	55°F	78°F

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## Hot Water Temperature

**Did you know** for every 10°F you turn down your hot water heater, you'll save 3% to 5% on your bill. If set too high, your water heater can waste anywhere from \$36 to \$61 annually in standby heat losses and more than \$400 in demand losses.

1. Using the digital thermometer, measure the temperature of your home's hot water and record your findings. **Temperature:** \_\_\_\_\_ °F

2. The recommended temperature for your hot water is 120°F. If your hot water temperature was HIGHER than the recommended setting, did you adjust your hot water heater?

Yes  No  Temperature was at the recommended setting  Hot water heater not accessible

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## Refrigerator and Freezer Temperature



- Using the digital thermometer, measure the temperatures of your refrigerator and freezer. Record your findings below.

**Refrigerator:** \_\_\_\_\_ °F      **Freezer:** \_\_\_\_\_ °F

- The ideal temperature for your refrigerator is within **36-38°F** . If your refrigerator was not within the ideal range did you adjust it?

Yes  No  Temperature was within the range  Refrigerator not accessible

- The ideal temperature for your freezer is within **0-5°F** . If your freezer was not within the ideal range did you adjust it?

Yes  No  Temperature was within the range  Freezer not accessible

## Watt Meter



- Using the watt meter, measure the wattage of two appliances. Then follow the instructions to calculate the cost of operating each appliance for one year.

Helpful Hint: Round "Hours on per day" to the nearest quarter of an hour.  
(15 minutes = .25 30 minutes = .50 45 minutes = .75)

Appliance	Watts (from watt meter)	x	Hours on per day	x	Days on per year	÷	Convert to kWh	x	kWh rate (WI Avg)	=	Cost per year
Iron	200	x	.25	x	210	÷	1000	x	\$0.13	=	\$1.36
		x		x		÷	1000	x	\$0.13	=	
		x		x		÷	1000	x	\$0.13	=	


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## Home Lighting

**Did you know** if all U.S. homes replaced their five most frequently used light bulbs with more energy efficient models, together we would save close to \$8 billion annually in energy costs and prevent greenhouse gas emissions equivalent to the emissions of nearly 10 million vehicles.

- Record the total number and types of light bulbs in three rooms of your home in Table 1.

I spend most of my time in these 3 rooms:	Number of INCANDESCENT light bulbs	Number of COMPACT FLUORESCENT LAMPS (CFL)	Number of LIGHT-EMITTING DIODES (LED)	Number of OTHER light bulbs
1.				
2.				
3.				
<b>Total</b>				

- Follow the instructions to calculate the cost of operating each type of light bulb for one year in Table 2.

Type of Light	Total Number of Bulbs (from Table 1)	x	Average Wattage	x	Hours on per Day	x	Days on Per Year	÷	Convert to kWh	x	kWh rate (WI Avg)	=	Cost per year
Incandescent		x	60 W	x	6 hr	x	365	÷	1000	x	\$0.13	=	
CFL		x	13 W	x	6 hr	x	365	÷	1000	x	\$0.13	=	
LED		x	9 W	x	6 hr	x	365	÷	1000	x	\$0.13	=	

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3. Follow the instructions to calculate the savings of replacing each type of light bulb with a more energy efficient model in Table 3.

<b>Cost per Year Incandescent</b> (from Table 2)	-	<b>Cost per Year CFL</b> (from Table 2)	=	<b>Total Savings per Year</b>
	-		=	
<b>Cost per Year CFL</b> (from Table 2)	-	<b>Cost per Year LED</b> (from Table 2)	=	<b>Total Savings per Year</b>
	-		=	

4. Did you replace any light bulbs with more energy efficient models?

Yes  No  Light bulbs are already energy efficient models  Light bulbs are not accessible