



Course: Electrical  
Section: HVAC Technician



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# Home Energy Inspection

## What You Will Do

Inspect your home and estimate how much electrical power your family would use if all lights and appliances were running for an entire day.

## Materials You Will Need

- Pencil
- Paper
- Calculator (optional)
- Access to light bulbs/appliances in home
- Flashlight for reading labels if needed

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## What is Wattage?

**Wattage** – the amount of electrical power an appliance or device consumes or generates. High-wattage devices, like heaters, use more energy faster than low-wattage ones like light bulbs.

**Voltage** – the electrical pressure or potential difference pushing electricity through a circuit.

**Amperage** – the unit of measurement for electrical current, representing the rate of electron flow.

Think of someone spraying you with a hose. The volts are the water pressure in a hose and amps are the volume of water flowing.

**Volts:** The water pressure pushing through the hose.

**Amps:** The amount of water moving through the hose.

**Watts:** The total power/work (how hard the water hits you)

## Part 1: The Inspection

Walk through your home and list as many electrical items as you can find.

Look for:

**Lamps and ceiling lights** – bedroom, kitchen, hallway, porch, etc.

**Appliances** – refrigerator, microwave, hair dryer, washer, dryer, toaster, etc.

**Electronics** – gaming system, TV, computer, etc.

## Part 2: Find the Wattage

Look for labels on appliances or bulbs. Write down wattage. Multiply the number of an item by its wattage to get the total watts. Add everything in the Total Watts column to get the total power usage for your home.

Example Table:

Item	Number in Home	Watts Each	Total Watts
LED Bulb	8	9W	72W
TV	2	120W	240W
Microwave	1	1000W	1000W
Refrigerator	1	700W	700W
			<b>2012W</b>

1000W = 1kilowatt (1kW). The sample above is 201.2kW.

## Part 3: Calculate Cost

The total watts above is how much power your home would use in one hour if everything was on at the same time. Electricity is billed by kWh (kilowatt hours). The average cost for power in West Virginia is 15 cents per kWh.

How much would it cost to run everything in your house for an entire day?

Total Watts x \$0.15 = Cost per Hour

Cost per Hour x 24 hours = Total Cost for a Day

\_\_\_\_\_ x 0.15 = \_\_\_\_\_

\_\_\_\_\_ x 24 = \_\_\_\_\_

## Reflection Questions

What could your family do to reduce the amount of money you spend on electricity?

How could adding a renewable energy generator to your home reduce your electric bill?