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Student Exploration: Household Energy Usage

Directions: Follow the instructions to go through the simulation. Respond to the questions and prompts in the orange boxes.

Vocabulary: current, energy consumption, fluorescent lamp, halogen lamp, incandescent lamp, lumen, usage, voltage, wattage

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

1. Think about all the electrical appliances in your house. Which ones do you think use the most energy per second?

Oven, Microwave, Hair Dryer

2. Now think about how much each of these appliances is used. Which appliances do you think use the most energy each month?

A/C and Heating system

Gizmo Warm-up

The *Household Energy Usage* Gizmo allows you to compare the energy used by different appliances in the home. On the **BEDROOM** tab, click the laptop computer.



1. **Voltage** (V) is a measure of how much electrical energy is in a circuit. Most household circuits operate at 120 volts (120 V).

Is this true of the computer?

Yes

2. **Current** (I) is a measure of the amount of electrical charge that passes through the circuit each second. Current is measured in amperes (A).

How much current does the computer use?

.9 Amps

3. **Wattage** (W) is the energy that is used by a device each second. It is equal to current multiplied by voltage ($W = I \times V$). Wattage is measured in watts (W) or kilowatts (kW).

A. What is the wattage of the computer?

108 W

B. Click on the other objects. Which has the highest wattage?

Blowdryer (1,584 W)

Answers For Household Energy Usage Gizmo

Bajgoric, Nijaz

A red circular graphic with a gradient, appearing as a semi-circle or a partial circle, located to the right of the author's name.

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