CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
Aakash N. Shah

Project Number
J1031

Project Title
Zap! Where Did It Go?

Abstract

Objectives/Goals
How much Standby Power is wasted in typical household electronic devices per hour?

Methods/Materials
Kill-A-Watt (instrument to measure power)
Camera, Laptop, Desktop Computer, P.S.P. Console, Wii Console
Pencil, Logbook
An outlet
Table/free space

Results
Trial 1: 14 W
Trial 2: 16.5 W
Trial 3: 18.1 W

Conclusions/Discussion
My project was "How much standby power is wasted in typical household electronic devices?" I chose this topic because I've always wondered how much un-necessary energy is being wasted. Additionally, while I would be putting away my charger/adapter, it would be warm. So I asked my dad why do they stay "warm" and he said, it was due to standby power. I went to Intel Corporation to meet my dad and his colleagues to understand more about this standby power concept. There I used the 'Kill-A-Watt' instrument to test and measure various devices. I recorded all the data, observations and graphed the results. My hypothesis was that 32W - 35W (Watts) of standby power is wasted in typical household devices per hour. The average standby power from my three trials was 16.2 Watts. On an average, each device consumed the following amount of standby power:
Laptop - 1.03W,
Desktop Computer - 8.33W,
PSP Console - 2W,
Wii Console - 3.67W.
Therefore, my results DO NOT support my hypothesis. I think my hypothesis was wrong because originally I over-estimated that standby power in all these devices. Initially, in this experiment, I did not know how to measure standby power correctly. I did not have a good understanding of exactly what is standby power. Later, I corrected my mistakes and gained correct knowledge and achieved valid results.

Summary Statement
My project is about the amount of standby power being wasted in typical household electronic devices.

Help Received
My Science teacher Ms. Linsley answered questions; Dad and his colleagues made me understand the concept of standby power.