

## **Materials and Experimental Procedure Page**

**This page must be handed in prior to beginning your experiment.**

### **MATERIALS LIST**

**The materials section is a list of everything you used while running the experiment including chemicals, equipment, measurement devices, safety equipment, etc.**

### **EXPERIMENTAL PROCEDURE**

**The procedure section is a step by step description of how to perform the experiment. Explain all of the following that will apply to your project: how you will keep the controlled conditions the same, what device you will use to measure the data with and in what units (must be metric), how you will measure the data using the device, when to measure the data, when to record the data, how many trials to repeat and all safety precautions.**

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## Sample Materials List & Experimental Procedure

### Materials List

- CD player & a CD (low drain device)
- Three identical flashlights (medium drain device)
- Camera flash (high drain device)
- AA size Duracell and Energizer batteries
- AA size of a "heavy-duty" (non-alkaline) battery (I used Panasonic)
- Voltmeter & a AA battery holder
- Kitchen timer

### Experimental Procedure

1. Number each battery so you can tell them apart.
2. Measure each battery's voltage by using the voltmeter.
3. Put the same battery into one of the devices and turn it on.
4. Let the device run for thirty minutes before measuring its voltage again. (Record the voltage in a table every time it is measured.)
5. Repeat #4 until the battery is at 0.9 volts or until the device stops.
6. Do steps 1–5 again, three trials for each brand of battery in each experimental group.
7. For the camera flash push the flash button every 30 seconds and measure the voltage every 5 minutes.
8. For the flashlights rotate each battery brand so each one has a turn in each flashlight.
9. For the CD player repeat the same song at the same volume throughout the tests.

[http://www.sciencebuddies.org/science-fair-projects/project\\_sample\\_materials\\_procedure.shtml](http://www.sciencebuddies.org/science-fair-projects/project_sample_materials_procedure.shtml)