Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_

**Sources of Electrical Energy**

**Lab #1 – Use and Test Batteries**

**Equipment and Materials**

* Multimeter or voltmeter
* 1 ½ volt battery
* Automobile battery (with accessible cells)
* Assorted dry cell batteries (such as camera batteries or flashlight batteries including carbon-zinc, alkaline, nickel-cadmium, and silver-oxide)
* 1 ½ volt lamp
* Hydrometer

**Procedure**

1. Examine the assortment of dry cell batteries and note the physical sizes and the voltage markings, if any, on the batteries.
2. Discuss whether or not the various dry cell batteries are rechargeable.
3. Connect the voltmeter across the 1 ½ volt battery, then read and record the voltage.

\_\_\_\_\_\_\_\_\_ volts

1. Connect the 1 ½ volt lamp across the 1 ½ volt battery, then with the lamp connected, read and record the voltage.

\_\_\_\_\_\_\_\_\_\_\_ volts

1. Disconnect the voltmeter and lamp from the battery.
2. Remove a cell cover from the automobile battery.

**Caution:** The electrolyte is an acid. Do not spill it on your skin or your clothes.

1. Carefully withdraw sufficient electrolyte from the battery into the hydrometer to cause the float to be suspended.
2. Read and record the hydrometer float level.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Discuss the meaning of the float level with your teacher.