

Lesson #4

Batteries and Cells

1. What are batteries?

- A group of cells supplying electrical energy (chemical energy)
- A single dry cell is not a battery, in the true sense! (ex. A cylindrical battery in a flashlight is a single dry cell)

2. What are batteries used for?

- Batteries are used for electrical energy

3. What electrical devices use batteries as a power source?

- Cars
- Flashlights
- Portable CD player
- Watch
- Cell phone

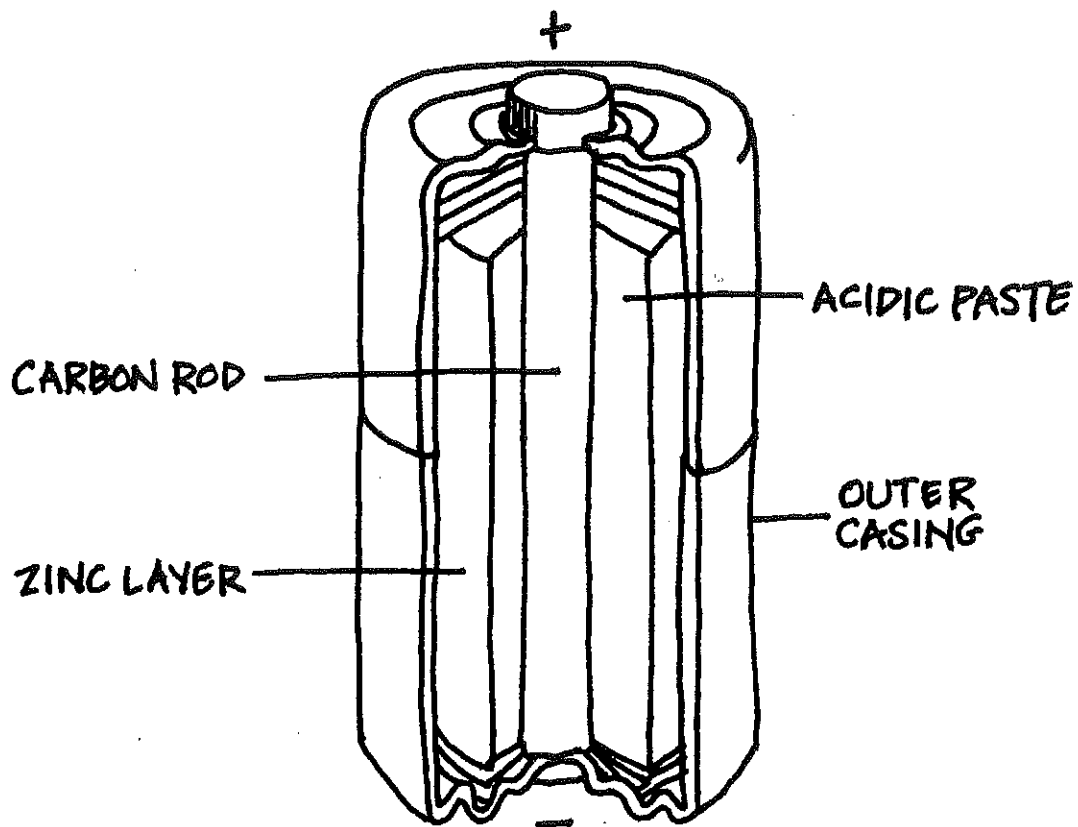
4. How do you think a battery works?

1. When a battery is connected by wires to a device (such as a light bulb), the acidic paste begins to act on the metal.
2. The carbon rod becomes positively charged and the zinc becomes negatively charged.
3. As a result, an electric current runs through the paste and into the wires outside the cell or battery.

4. What is inside a battery?

1. A dry cell contains acidic paste, zinc and carbon electrodes (rods).
2. A wet cell contains acidic acid (diluted sulphuric acid) and electrodes of lead dioxide and spongy lead (ex.: a car battery consists of several wet cells joined together)

Single Dry Cell (flashlight battery)



2 Types of Batteries

1. The one-time use battery:

- which generates an electrical current chemically. When the original chemicals have been changed in the process of using energy to move electrons, the battery is no longer useful.

2. Rechargeable Batteries:

- In which chemicals giving energy to electrons can be returned to their original state by running an electrical current through them in the reverse direction. The battery is then ready to use again.
- A car battery is an example.

Advantages to Using Batteries

Batteries are:

1. compact
2. portable
3. adaptable for many different applications
4. some types are rechargeable

Disadvantages to Using Batteries:

Batteries are:

1. COSTLY!
2. Made of materials and chemicals that create pollution concerns
3. Difficult to dispose of (toxic chemicals can leak out from decaying batteries)
4. Made from nonrenewable resources (the supply of materials they are produced from are limited!)