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Batteries give electric power to flashlights, radios, cell phones, handheld games, and many other types of equipment. A battery is a sort of container that stores energy until it is needed. Chemicals inside the battery store the energy. When the battery is used, the chemical energy changes into electric energy.

Inside a battery there are two pieces of metal in a liquid or a paste. The metal parts are called electrodes. The liquid or paste, called an electrolyte, is a mix of chemicals. Each electrode has a point, called a terminal, that sticks out of the battery.

For a battery to work, the terminals must be linked by an outside wire. Then the chemicals in the electrolyte cause electrons to flow from one electrode to the other. (Electrons are parts of atoms, the tiny bits of matter that make up the universe.) A flow of electrons is an electric current. The electric current flowing through the wire is what makes flashlights and other electric equipment work.

There are two basic types of batteries. A battery that can be used only once is called a primary battery. When the metals or electrolytes are used up, the battery can no longer make electricity. The batteries used in flashlights, radios, and toys are primary batteries.



Without batteries, there would be no cell phones, watches, tablets, hearing aids, flashlights, electric cars or communication satellites - and the list goes on. The first battery was invented over 200 years ago, and ever since then, these ingenious devices have become indispensable in our daily lives.

In an electric circuit, batteries serve as a power source by creating a potential difference that drives the flow of electric current. As current passes through the circuit, it transfers energy to any devices connected to it. In such a circuit, the type of current that flows is direct current. In other words, the current that flows goes in one, continuous direction.

Conversely, power supplied by a power plant is accessed via the outlets in your home and is in the form of alternating current. This type of current alternates direction with a certain frequency in order to power devices.

A typical battery is composed of one or more cells that have a cathode (positive terminal) on one end and an

anode (negative terminal) on the other end. Chemical reactions contained within cause a buildup of electrical charge at the terminals, producing an electric potential across the nodes via the release of chemical energy.

The chemical reactions in the battery cause electron buildup at the anode. This creates an electric potential between the cathode and anode. The electrons want to make it to the cathode in order to neutralize the charge, but they cannot do so by traveling through the electrolytic material inside the battery itself. Instead, electrons flow easily through a conducting wire connecting the anode to the cathode.

Eventually, the chemical processes creating the surplus of electrons in the anode come to a stop, and the battery dies. With rechargeable batteries (also called secondary batteries), however, this process can be reversed by connecting the batteries to battery chargers after they die. Recharging a battery reverses the flow of electrons by using another power source. The chemical processes in the battery are able to reverse due to this added energy, and the battery will once again be able to power a circuit on its own.