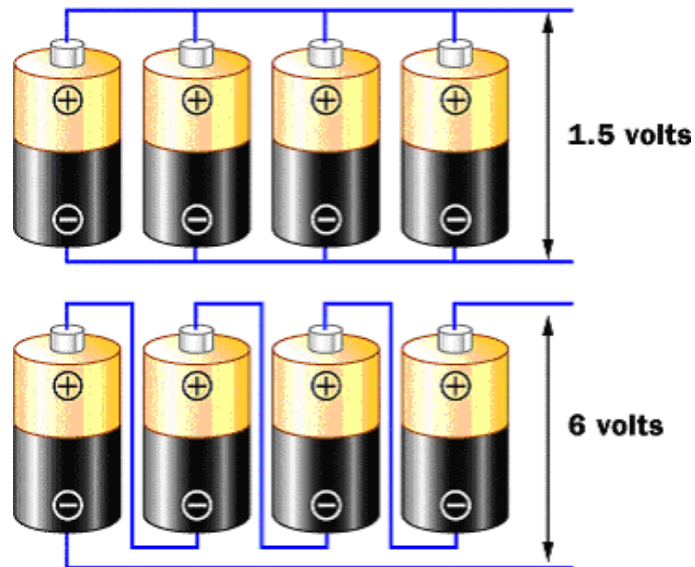


## Battery Arrangements

In almost any device that uses batteries, you do not use just one cell at a time. You normally group them together serially to form higher voltages, or in parallel to form higher currents. In a serial arrangement, the voltages add up. In a parallel arrangement, the currents add up. The following diagram shows these two arrangements:



The upper arrangement is called a parallel arrangement. If you assume that each cell produces 1.5 volts, then four batteries in parallel will also produce 1.5 volts, but the current supplied will be four times that of a single cell.

The lower arrangement is called a serial arrangement. The four voltages add together to produce 6 volts.

Have you ever looked inside a normal 9-volt battery?



Standard 9-volt battery

It contains six, very small batteries producing 1.5 volts each in a serial arrangement!