

# Making an Aluminium - air battery



## ***What is happening?***

A battery consists of an anode, a cathode and an electrolyte. In this battery, the anode is the aluminium foil, the cathode is the air in the charcoal, and the electrolyte is the salt water.

When students hook up their battery correctly in the circuit, they will get a reading on their voltmeter. Hook 4 or 5 batteries together in series, one after the other. It should be enough to light up the LED light!

## ***Why does it work?***

Aluminium is a very reactive metal. It is so reactive that it can react with oxygen in air! This is why it takes so much energy to refine it from ore in the first place. Once solid aluminium has been made, this energy is stored as chemical potential energy and can be released by reacting with oxygen.

## ***Did you know?***

Renewable energy sources such as wind, solar and hydroelectricity require energy to be stored in batteries. Different types of batteries are needed for different purposes; some need to be small and light, others can be heavy and bulky. Lithium-ion batteries have a lot of important uses in today's society, but the name is deceptive. They contain a lot more *carbon* (as graphite), *nickel*, *cobalt*, *copper* and *aluminium* than they do lithium.

Whilst increased usage of these types of batteries have great potential for society, lithium, nickel and copper are all endangered elements, and so will become limited in supply.