

What is Voltage?

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First, What is Charge?

One of the greatest discoveries in physics, by William Watson (in 1746) and Benjamin Franklin (in 1747), was that there is something he called “electrical fluid,” and which we now refer to as charge.

Famously, in 1752, Benjamin Franklin flew a kite carrying a metal key beneath it into a storm cloud and then brought the kite and the key back down. The key was holding some of the electrical fluid.

How do we know we have charge (or “electrical fluid”)? We catch it in a jar invented to hold charge in 1745 or 1746. It was invented independently by two people, Ewald Georg von Kleist, and Pieter van Musschenbroek. Van Musschenbroek lived in Leiden, and the jar is known as the Leyden jar. It is a glass jar coated with metal.

Nowadays, and emerging at the time, was the observation that the “electrical fluid” barely moved through glass or not at all, and that it easily moved through metal.

I only need you to accept that there is something called charge, and that it easily moves through metal. You don’t yet have to have a mental picture of what charge is.