

## **Electricity: The Invisible Power**

For the majority of us, the use of electricity doesn't even cross our minds until the lights go out and we're tripping over furniture in the dark to find a flashlight. Even then, we might not pause to wonder, how does it work? Instead, it may cause us to mutter expletives, how dare it not work! Electricity is seamlessly woven into our everyday lives. Try to imagine your life without it. Yep, you didn't get far, did you? So, how does this invisible power work?

Electricity, simply put, is the flow of electrons through a circuit. These tiny electrons buzz around atoms. Matter, or an object, is composed of atoms. Certain objects are not good conductors of electricity. Materials like wood, glass, plastic or rubber, contain electrons that stay with their atoms. They are called insulators. Conductors, such as metals, are materials that allow electrons to break free from the pull of their atoms. The electrons are able to zip around, creating the flow of electricity. A resistor, like the lead in a pencil, will let some electrons through, but not all. The easier it is for an electron to break free from the atom, the better the flow of electricity.

An electrical circuit has pressure and flow, like water in a garden hose. Pressure is known as voltage (volts) and flow is called amperage (amps). The higher the volts, the faster the electrons jump around. Amps refer to the number of electrons flowing through a wire. This combination of volts and amps is called watts or electrical power.

Most of our electricity is generated by water. As water falls from a dam, it runs huge generators. The power of the water moves a magnet near a wire inside the generator to push a certain number of electrons while applying pressure to them, creating electricity. This electricity might travel hundreds of miles through power lines to your home.

For electricity to work, it needs to travel in a circuit. A two-prong power cord creates a circuit. Electricity flows from one prong, down the wire, through an electrical device and then out the other side, into the wall. When you turn on a switch, the electrons start to flow to complete a circuit. So, the next time the electricity goes out, instead of cursing it, think of the complex system that powers your home.