

# Current Electricity

**Electricity:** An electrical power or current that is observable.

**Static Electricity:** The buildup of electrical charges on an object

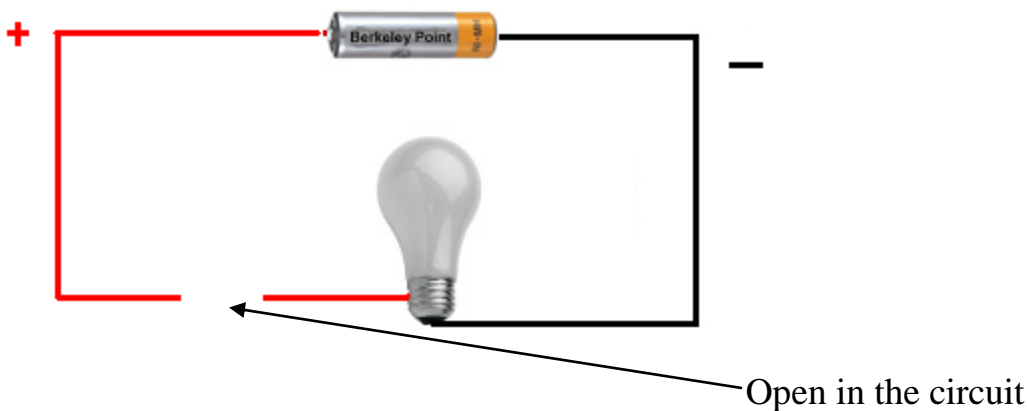
**Conductor:** Any material that allows electricity or electrical current to flow easily (example: metals, water, etc.)

**Insulator:** Any material that does not allow electricity or electrical current to flow (Examples: wood, paper, Styrofoam, plastic, rubber, etc.).

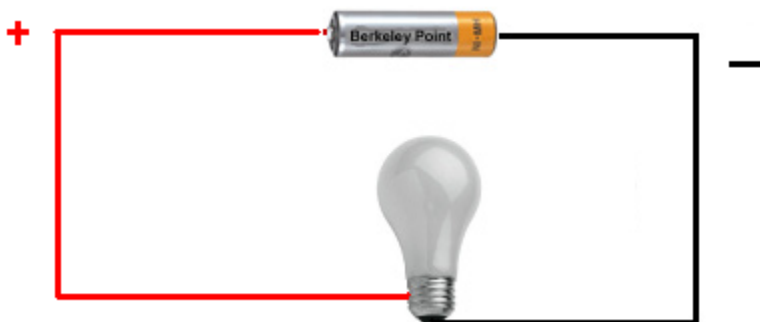
**circuit-** A path through which electricity flows

**Current electricity:** Moving electrical charge that flows through a circuit.

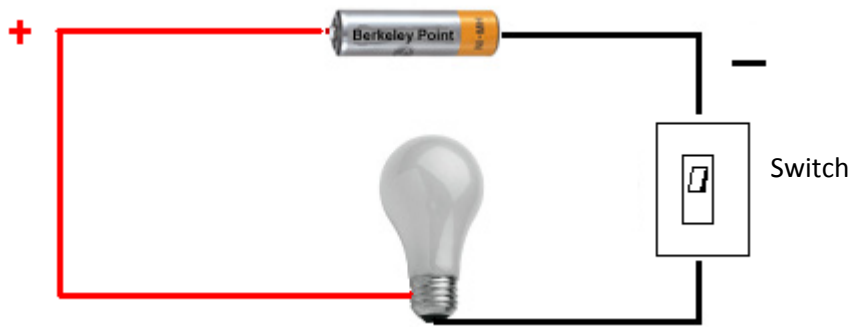
**open circuit-** A circuit that has gaps or breaks in it and does not allow electricity to flow. It is an incomplete circuit.



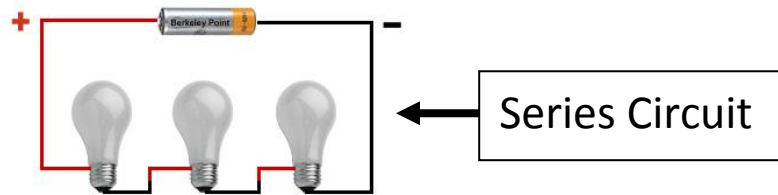
**closed circuit-** A circuit that has no gaps or breaks in it and allows electricity to flow. This is a complete circuit.



**Switch** – A switch can open and close a circuit. A light switch or power button on a cell phones are switches.



**series circuit**-Has only one path for electricity to flow.



\*Series circuits are cheaper than parallel circuits to make

\*If a light bulb goes out on a series circuit, it is difficult to find the problem.

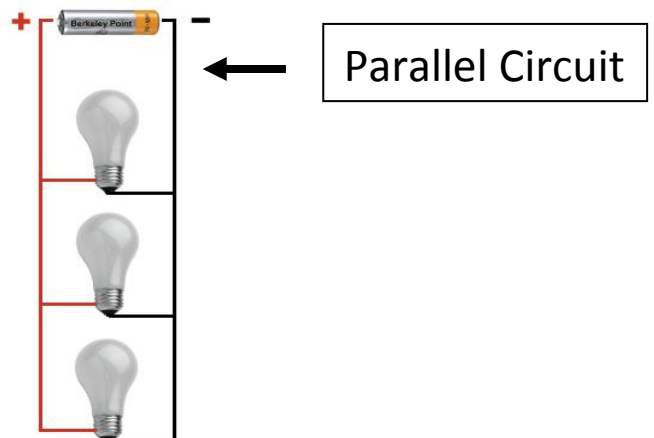
\*Used for cheap outdoor lights

**parallel circuit**-Has more than one path or separate paths through which electricity can flow.

\*Parallel circuits are more expensive than series circuits.

\*If a light bulb goes out on a parallel circuit, the Rest of the light bulbs will stay on.

\*Parallel circuits are used to provide electricity throughout houses



**resistor:** is a material through which electricity has difficulty flowing and changes electrical current into another form of energy (i.e. Light & heat).

**Short circuit:** Occurs when there is too much energy or electricity flowing in a circuit.

**Fuse:** is a device that keeps too much electrical current from flowing through wires.



**Circuit Breaker:** Used to protect homes from dangerously high current flows, which can result in fire.



## EQ: How Does Electricity Get To Your Home?

Here's how the electricity gets to your house:



Electricity is made at a **power plant** by huge **generators**. Most power plants use coal, but some use natural gas, water or even wind.



The current is sent through **transformers** to increase the voltage to push the power long distances.



The electrical charge goes through high-voltage **transmission lines** that stretch across the country. The voltage is then sent to another transformer so the power can be lowered and sent on smaller power lines



It travels through **distribution lines** to your neighborhood, where smaller pole-top transformers reduce the voltage again to take the power safe to use in our homes.



The electricity goes to the **service panel** in your basement or garage, where breakers or fuses protect the wires inside your house from being overloaded.



The electricity travels through wires inside the walls to the **outlets and switches** all over your house.