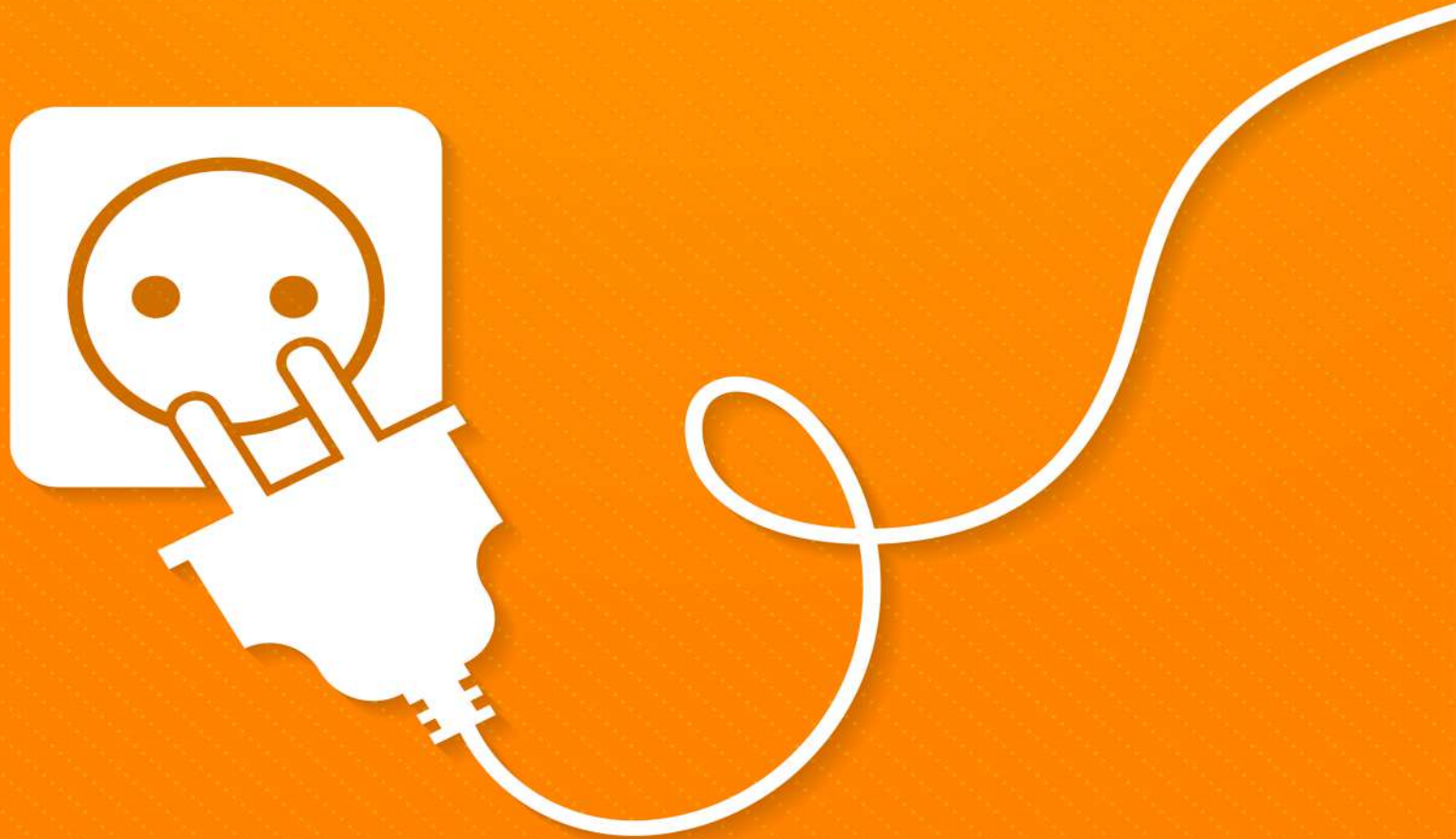


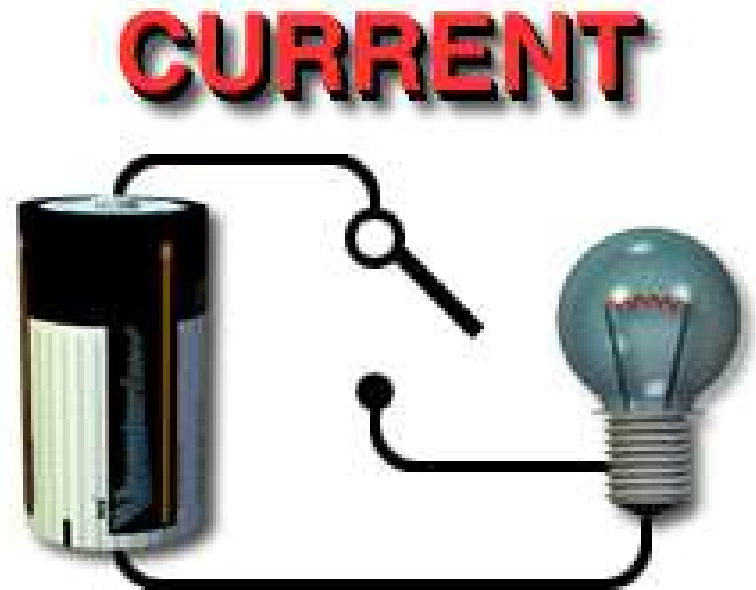
BASIC ELECTRONIC THEORY

Basic Circuitry



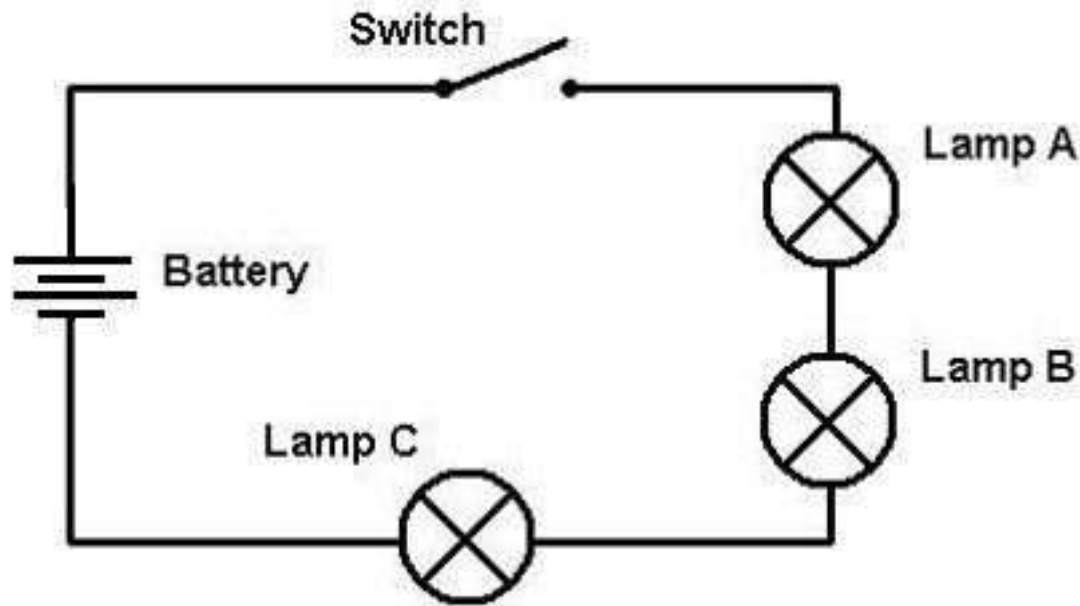
Circuits

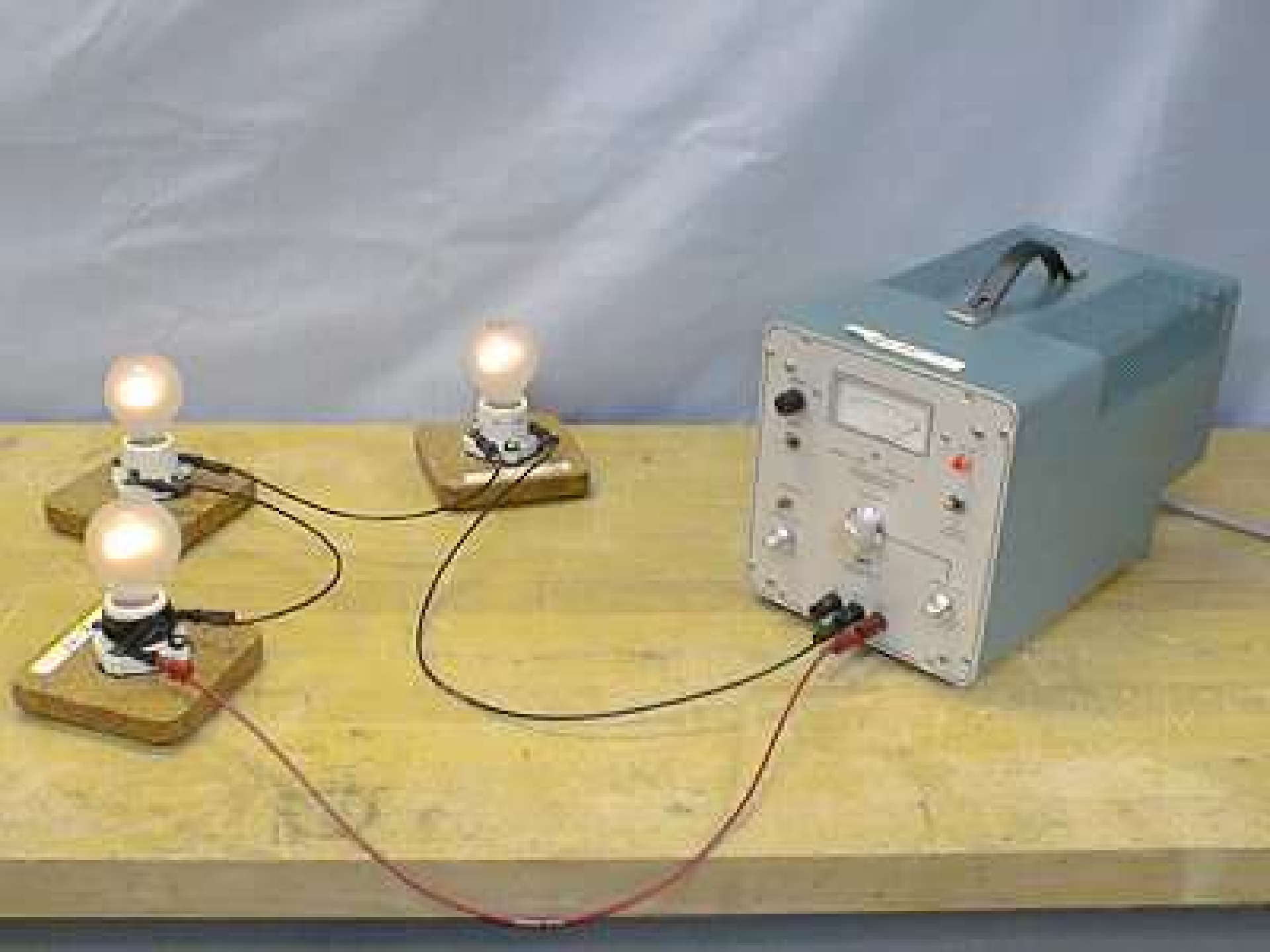
- Charged particles flow around a closed loop called a circuit. *They will not flow unless there is a conductor between the two sides of the voltage source.*
- A Short Circuit is an *open* loop.
- Switches control when the current flows in a circuit.



Series Circuit

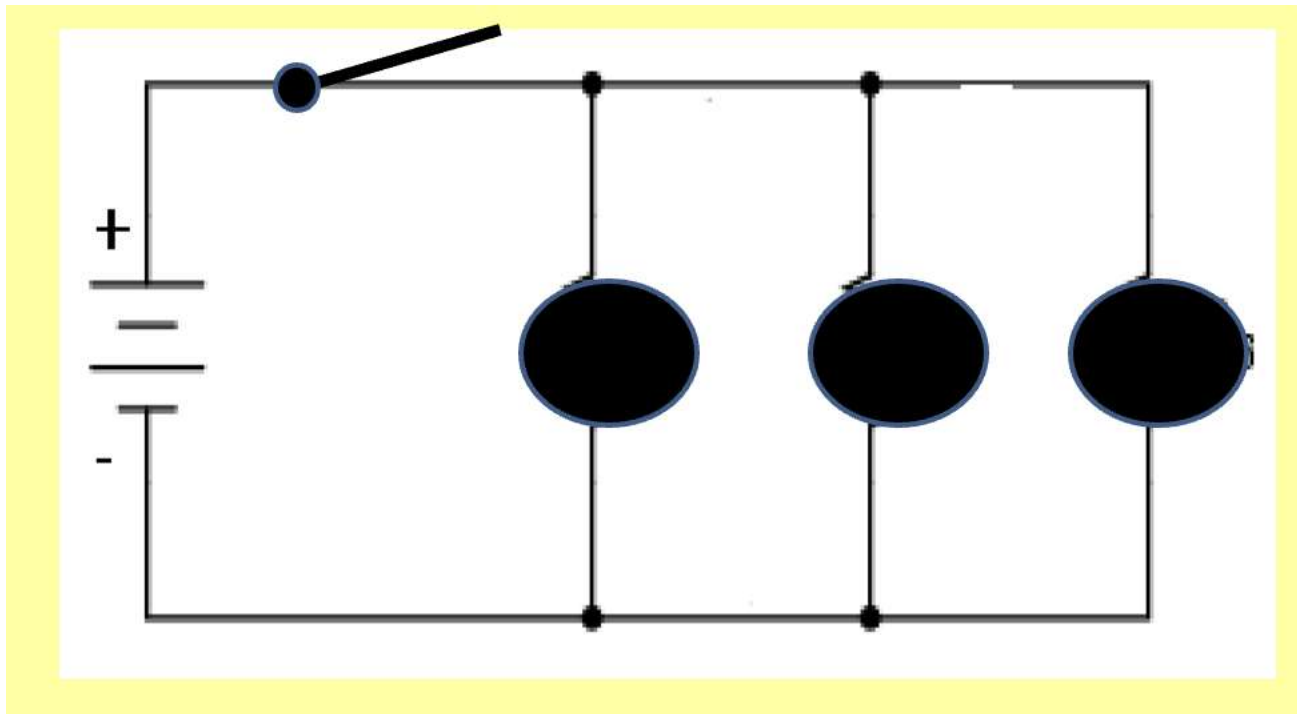
- In a Series Circuit all the electric components are along **one** path



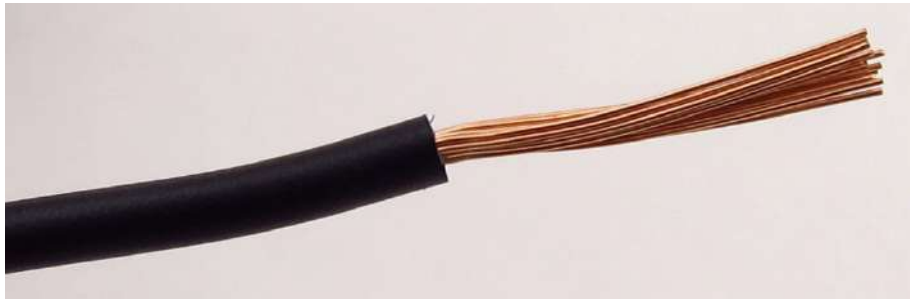


Parallel Circuits

- In a Parallel Circuit the electrical components are connected in **parallel**, or *not on one current path*

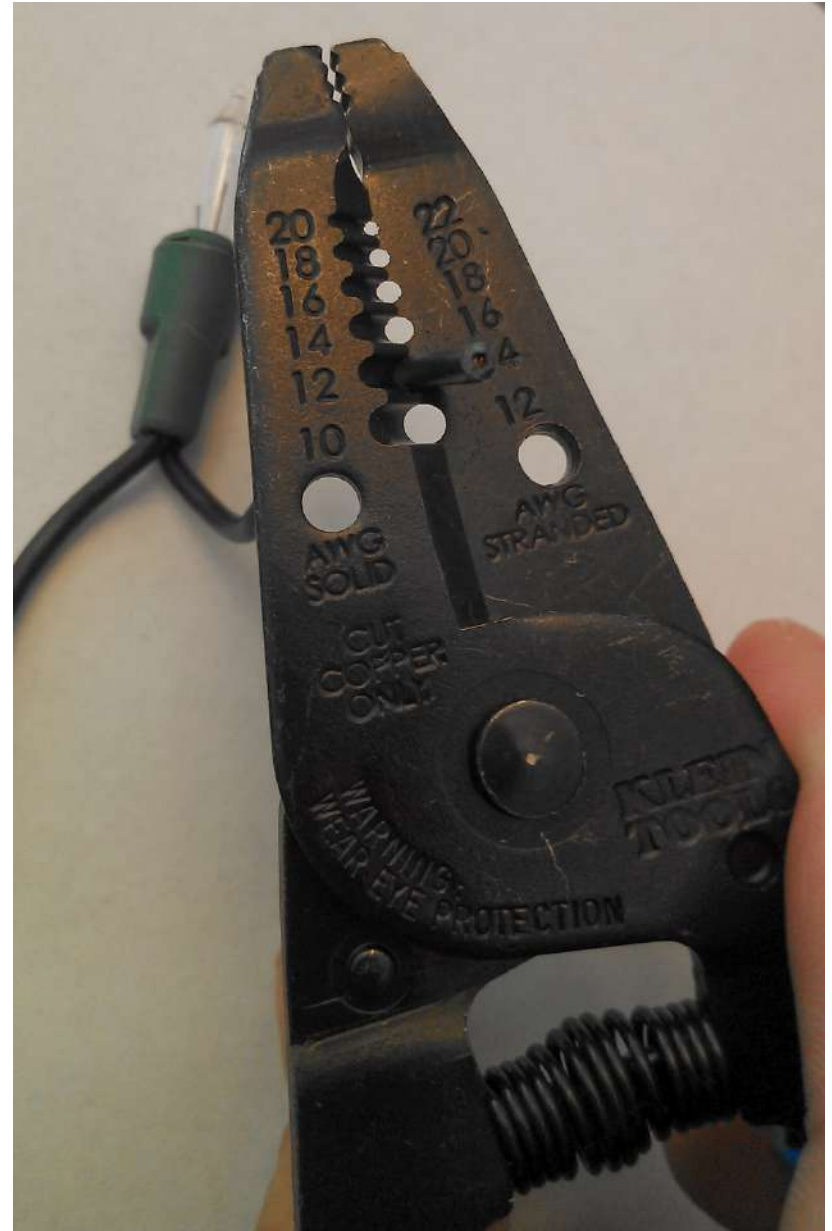




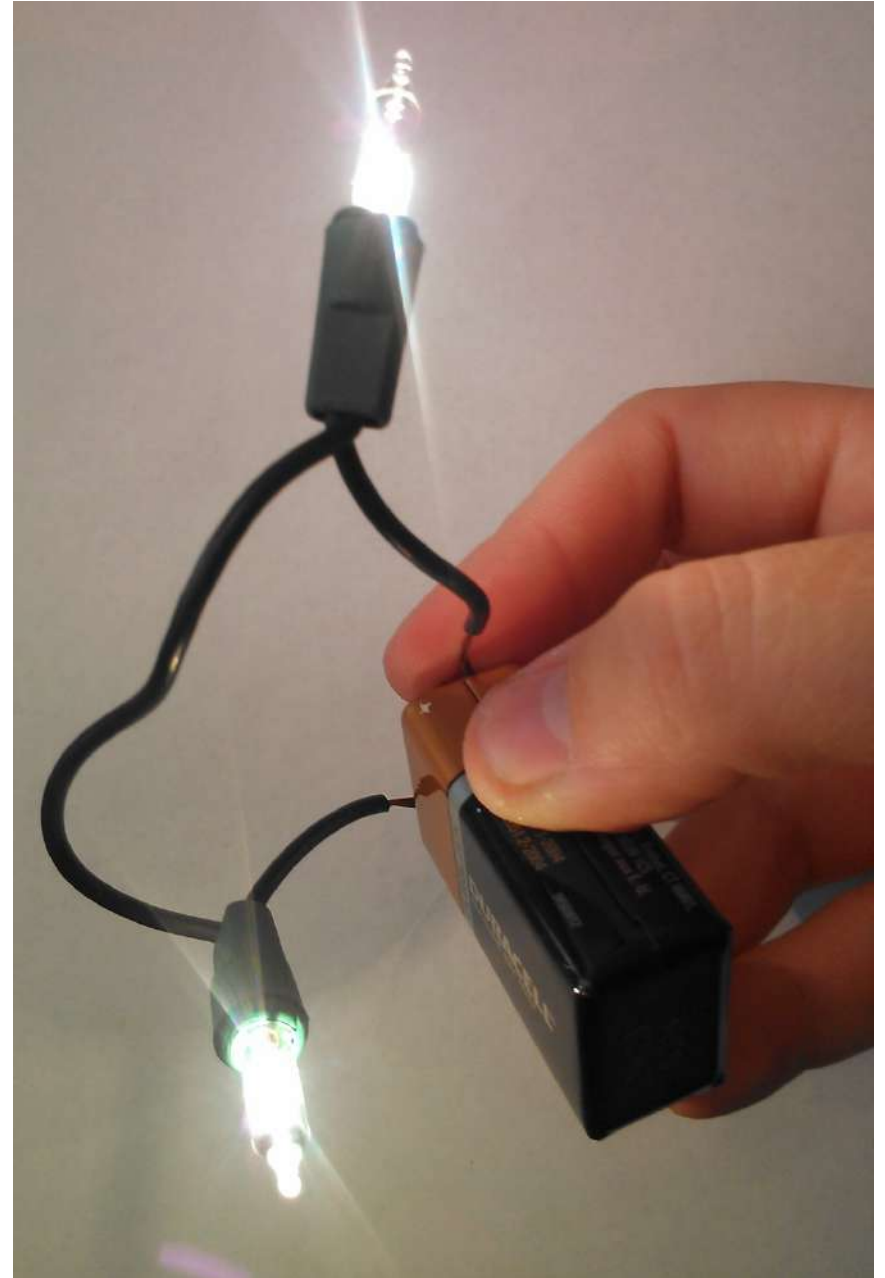
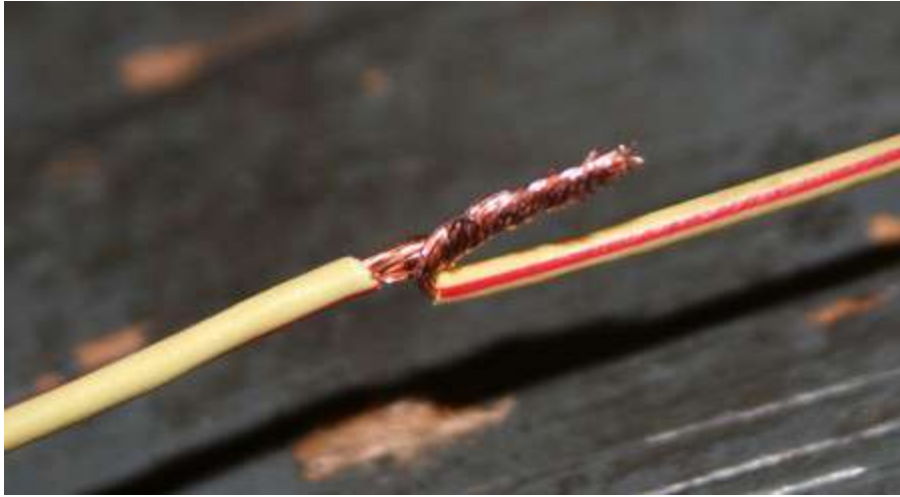


The insulation of the wire must be stripped to allow a connection between conductors (metal wire).

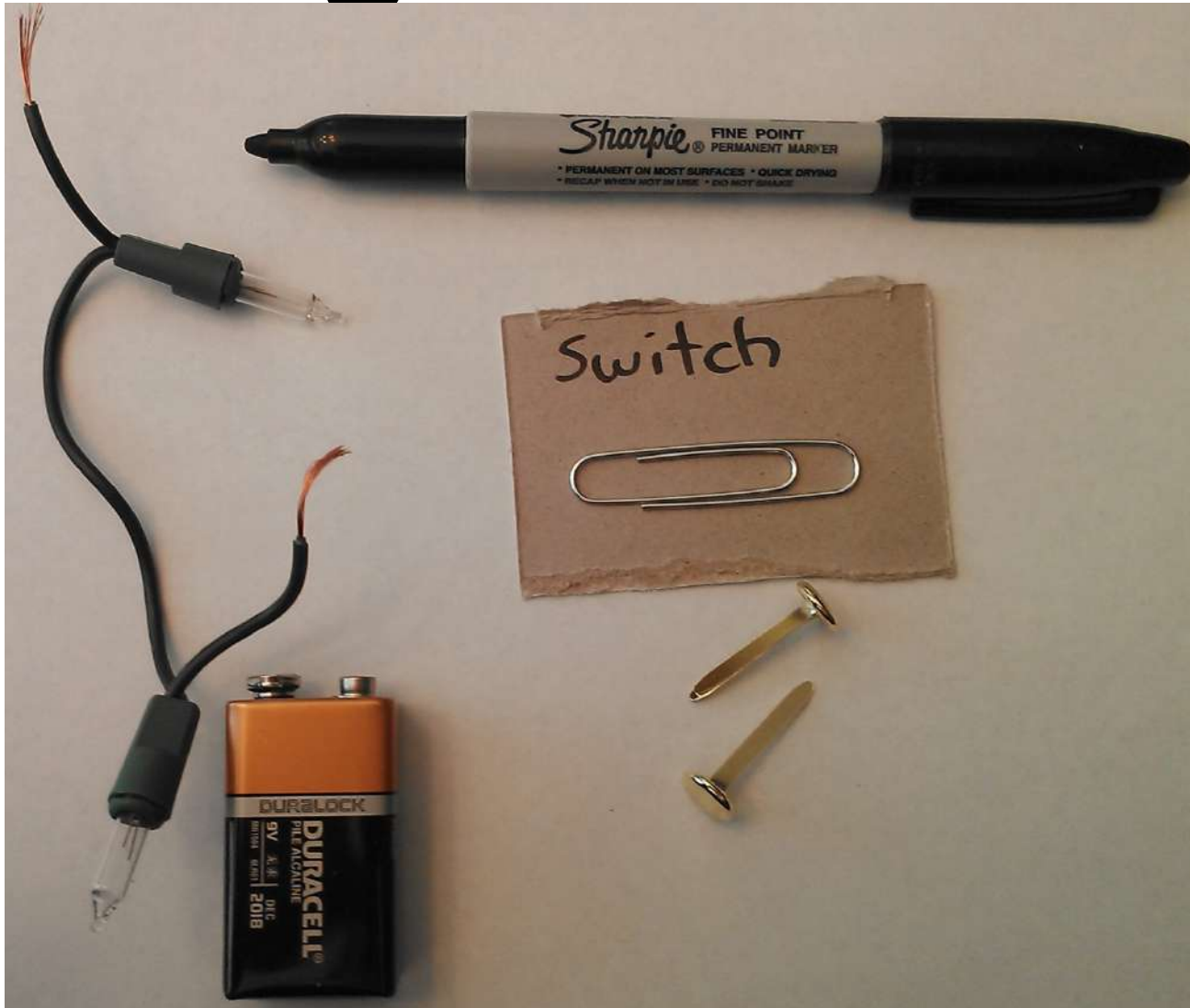
The insulator is the plastic coating.



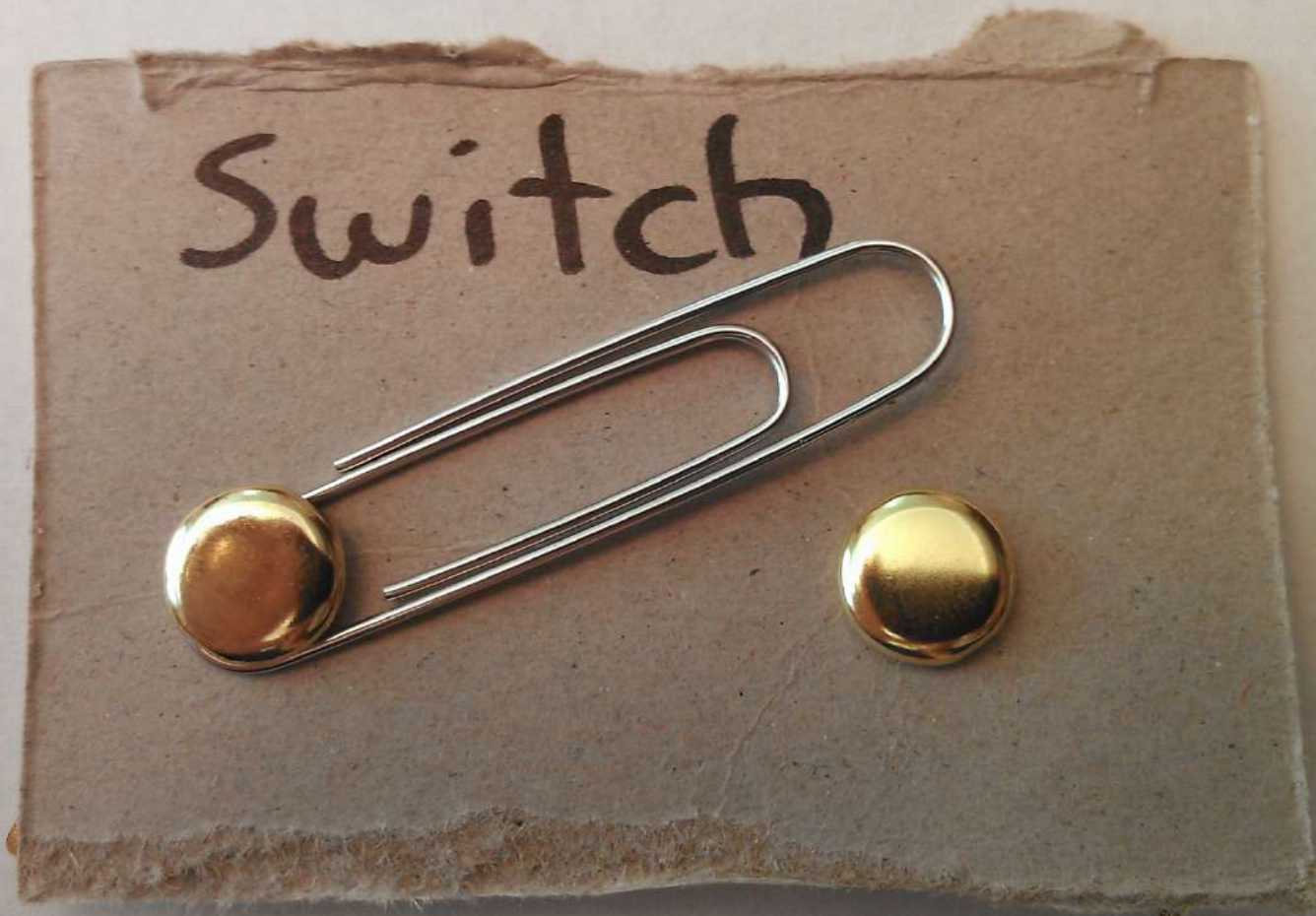


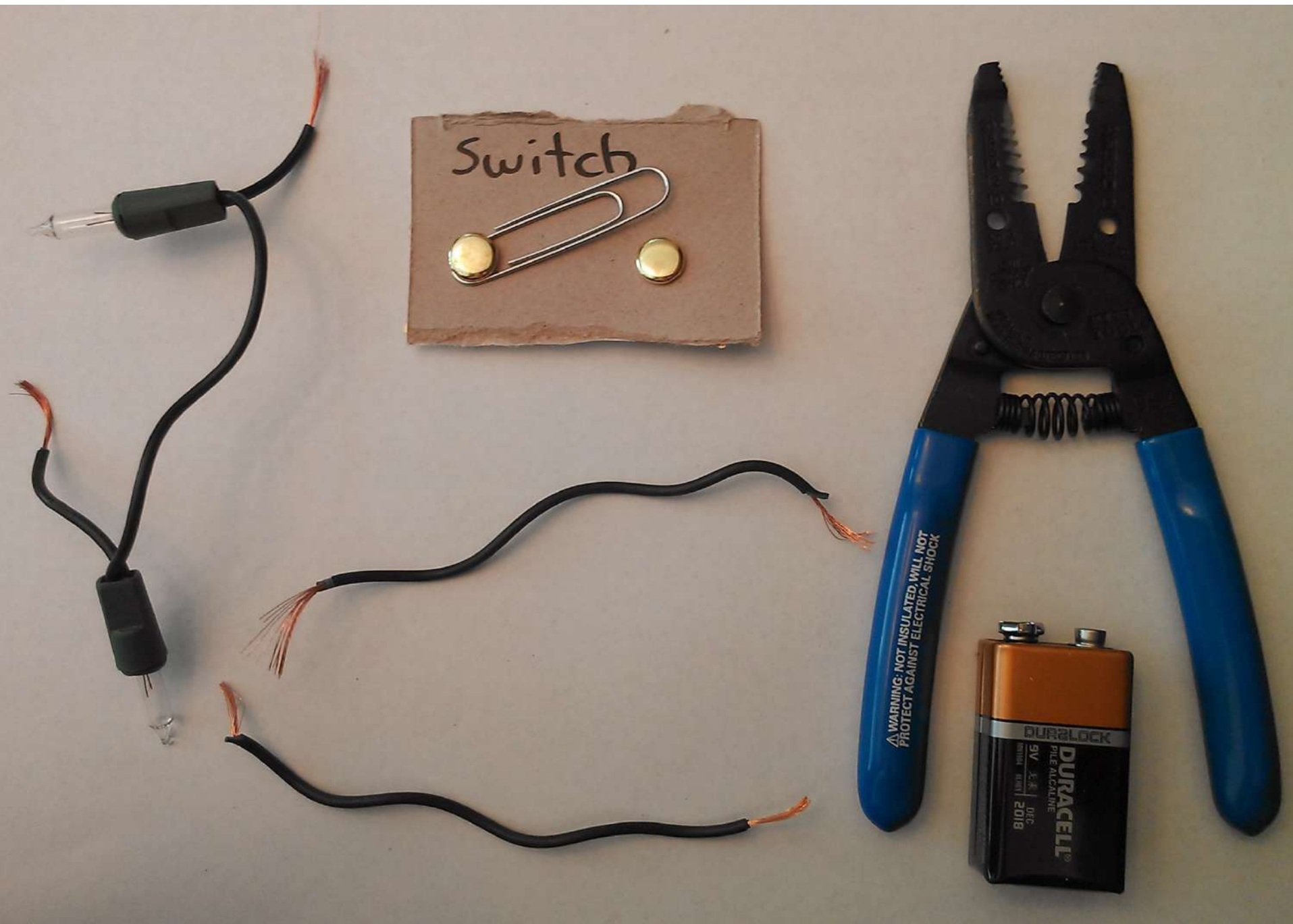


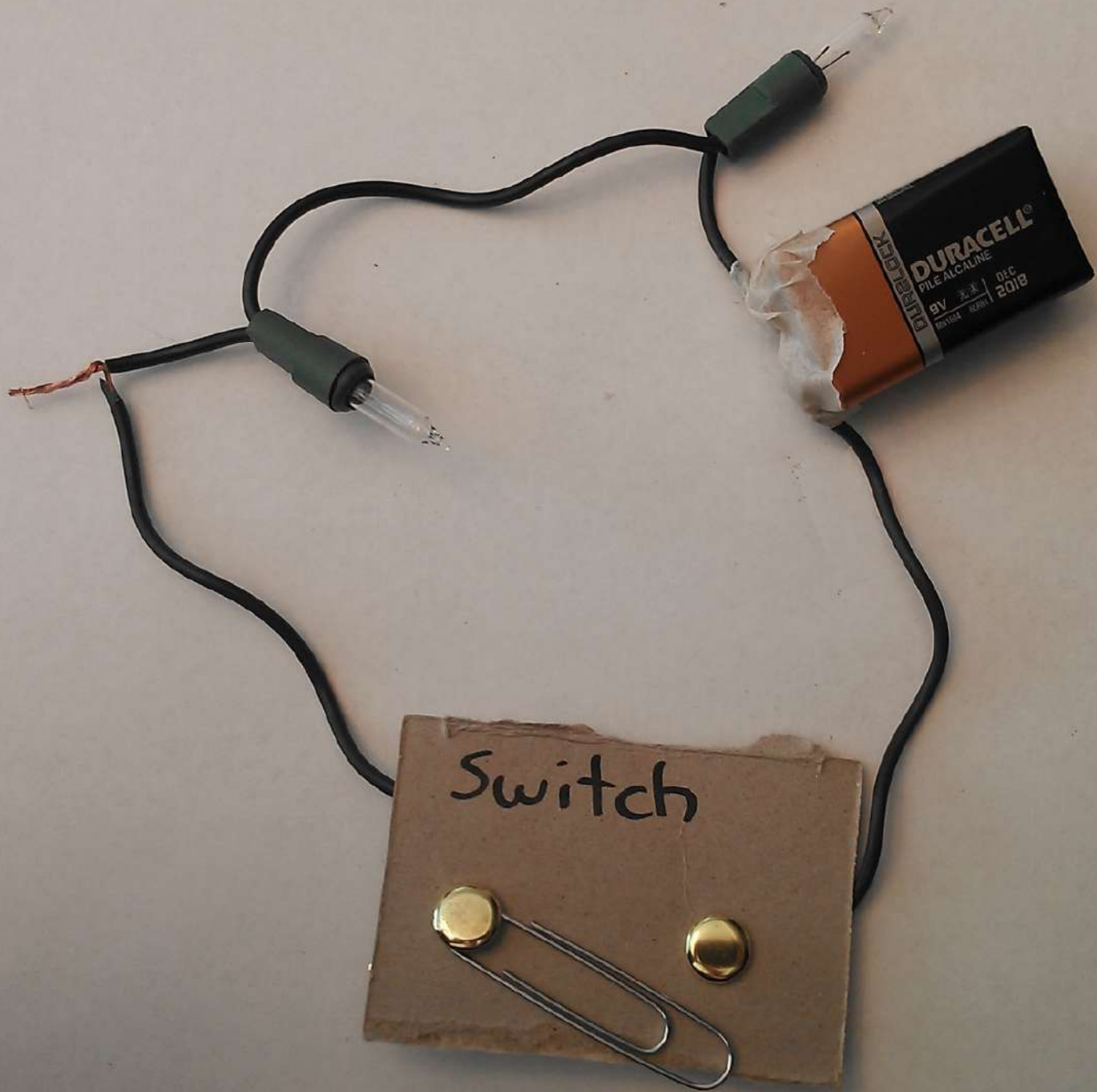
Making Switches

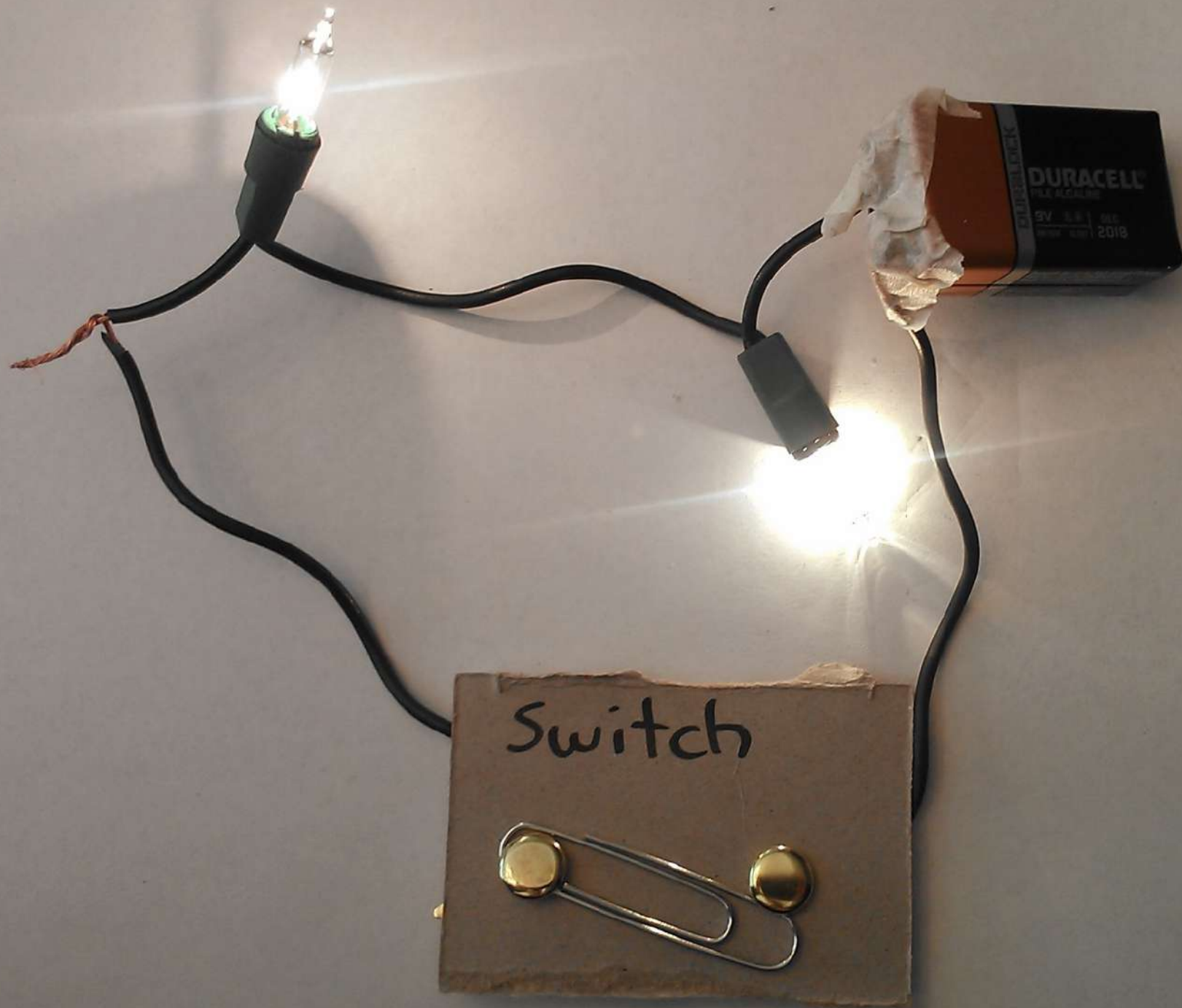


Making Switches











Materials needed:

- One box



- A portion of holiday lights
(a few feet should suffice)



Materials needed:

- Two thumbtacks and a jumbo paperclip **per** required switch

• *Students should have access to:*

Wire strippers



Wire cutters

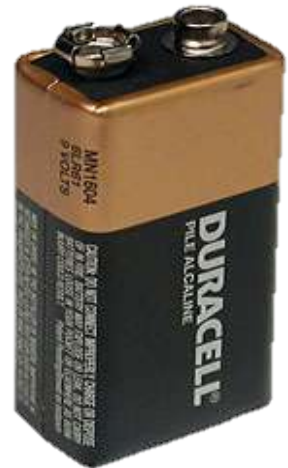


Materials needed:

- Scissors (*can replace wire strippers and wire cutters if heavy duty*)



- 9 V battery or voltage generator



Materials needed:

- Materials to decorate the walls and floors including scraps of fabric, paper, etc.











Requirements

- 3 Rooms with only 1 battery powering all
- 1 room with 2 lights that both go on and off together
- 1 room with 2 lights that have separate switches – 1 goes off other stays on
- 1 room with 1 light only
- Each room must have 2 pieces of furniture made from cardboard (Tables, chairs, bed, couch, etc.)
- Each room must have flooring and wallpaper - can be printed and glued into place.