

# NEW TEXTILES

## CONDUCTIVE TEXTILES & LEDs

MAS 962  
Professor Leah Buechley

<http://newtextiles.media.mit.edu/>

# Conductive thread or “yarn”



# Conductive yarns: metal wrapped

- Fabric core wrapped with metal
- Highly conductive
- Beautiful
- Fragile
- Sewability: not machine sewable



Image: Public domain.

# Conductive yarns: metal plated

- Fabric core plated with metal (usually silver)
- Reasonably conductive
- Plating tarnishes and cracks with washing and wear
- Can be polished
- Sewability: some varieties machine sewable

# Conductive yarns: spun stainless steel

- 100% stainless steel
- Highly conductive
- Corrosion resistant
- Difficult to work with
- Sewability: some varieties machine sewable as bobbin thread

# Conductive fabrics



# Fabrics constructed with conductive yarns

- Most are highly conductive
- Beautiful
- Sometimes useful weaves (ie: lines)
- Often very expensive



Photo by [nonoq8](#) on Flickr.

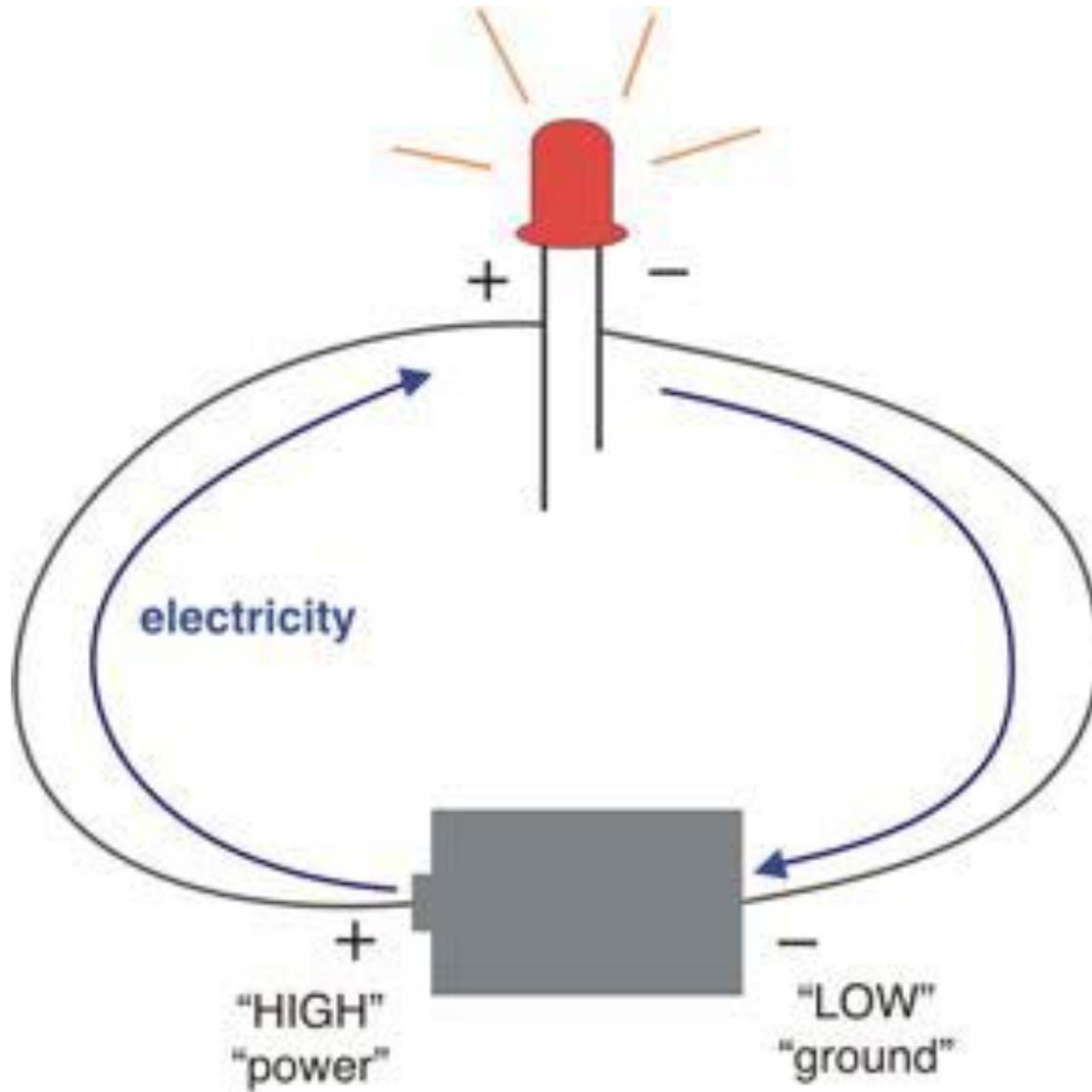
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# Conductive fabrics: metal plated

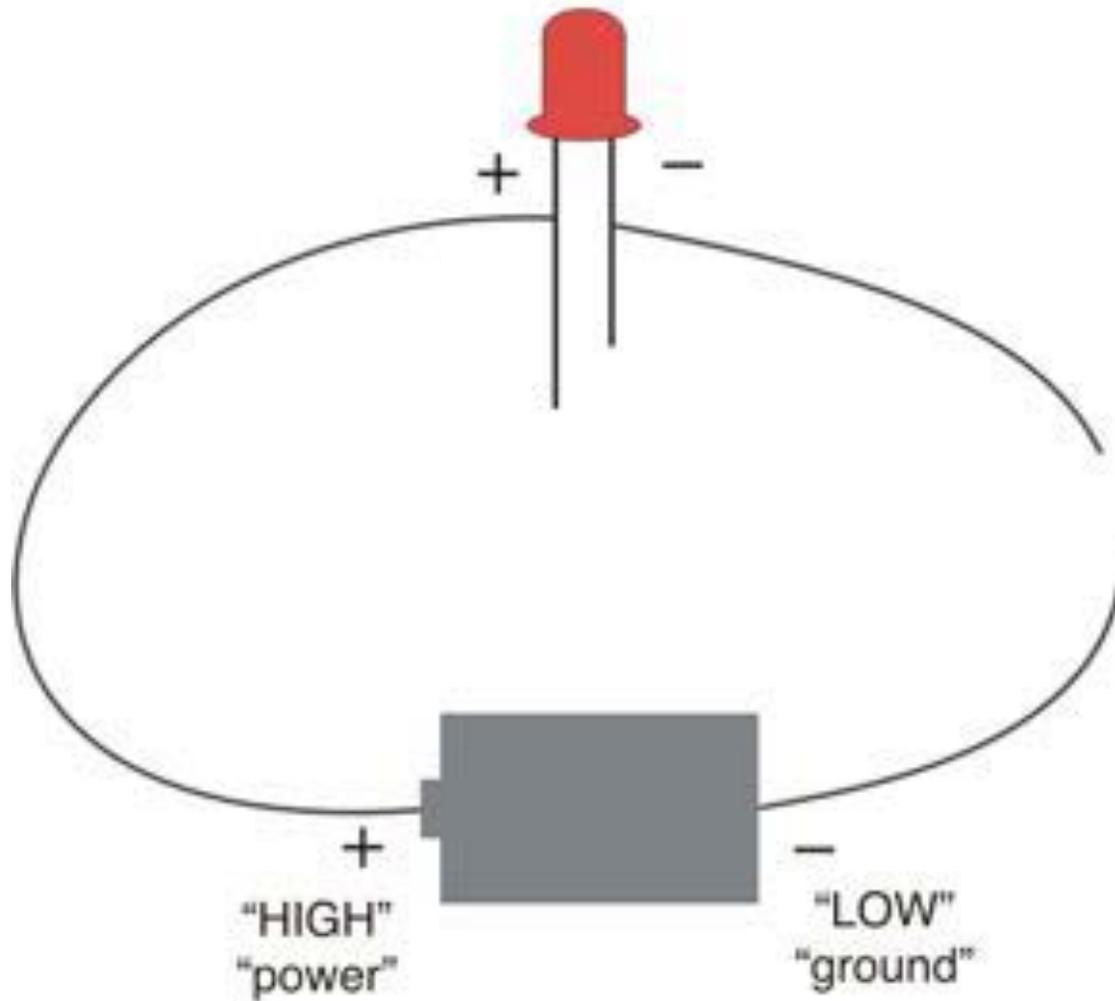
- Traditional cloth plated with metal
- Common platings
  - Copper
  - Tin
  - Silver
- Most are highly conductive

# CIRCUITS & LEDs

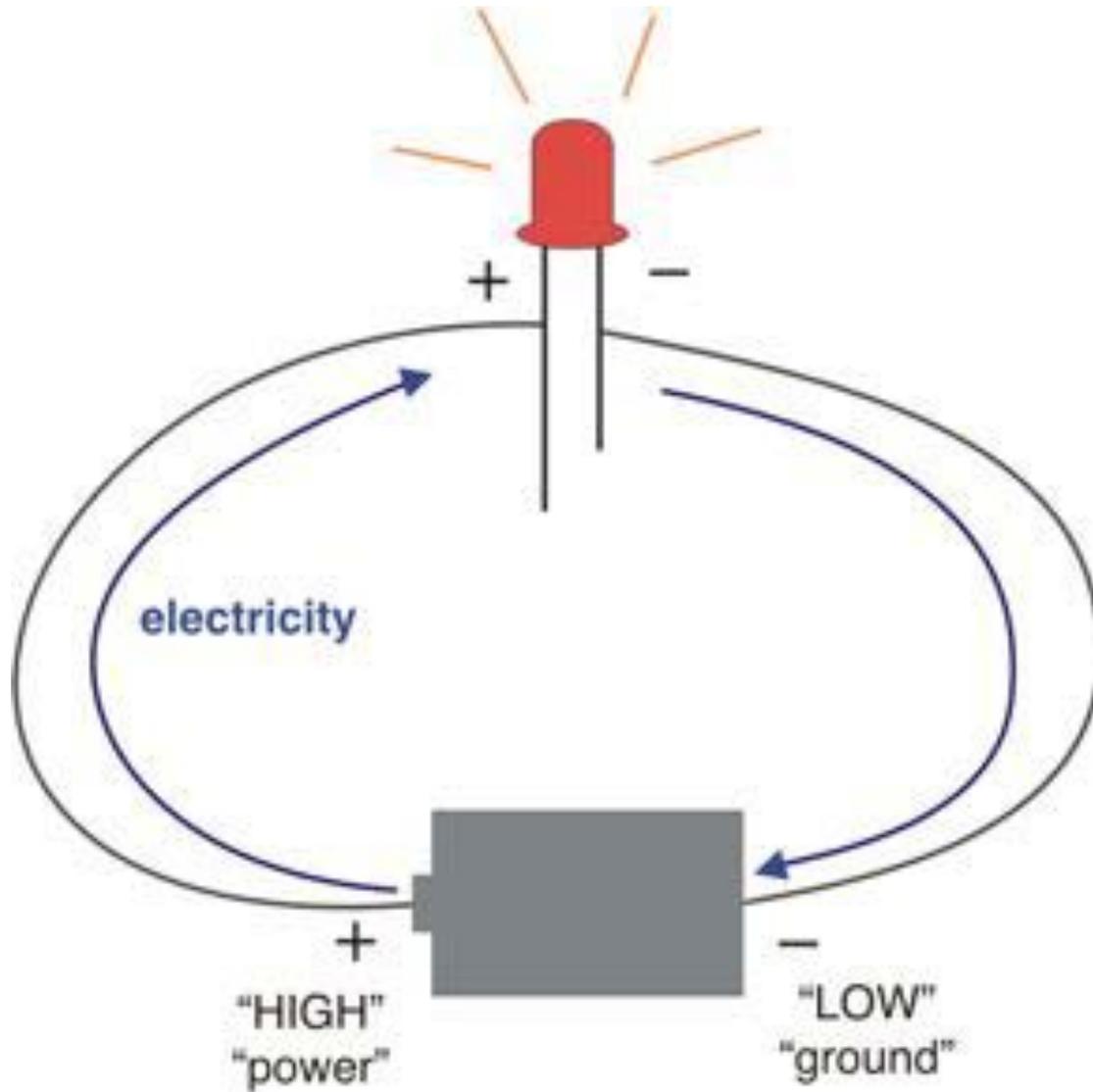
a simple circuit...



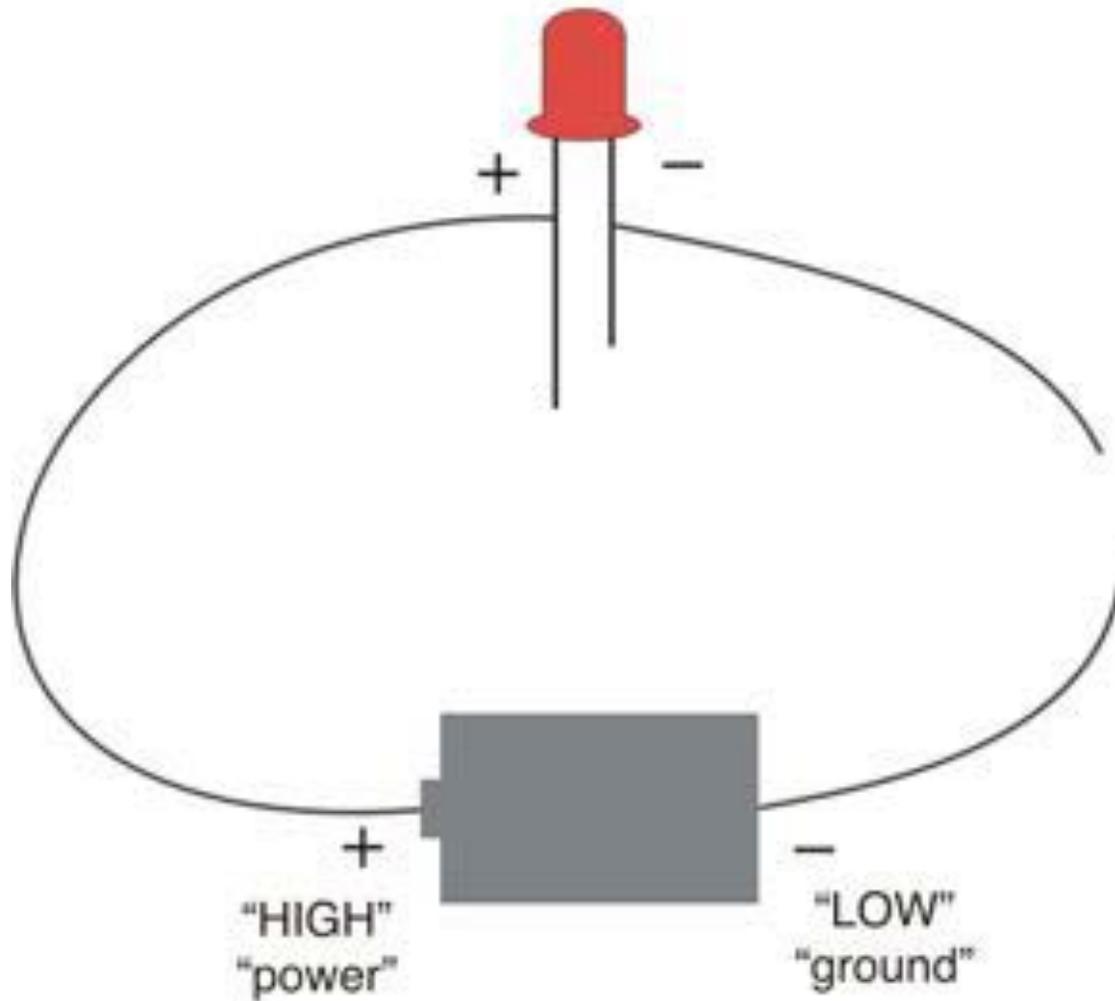
a simple circuit...with a switch



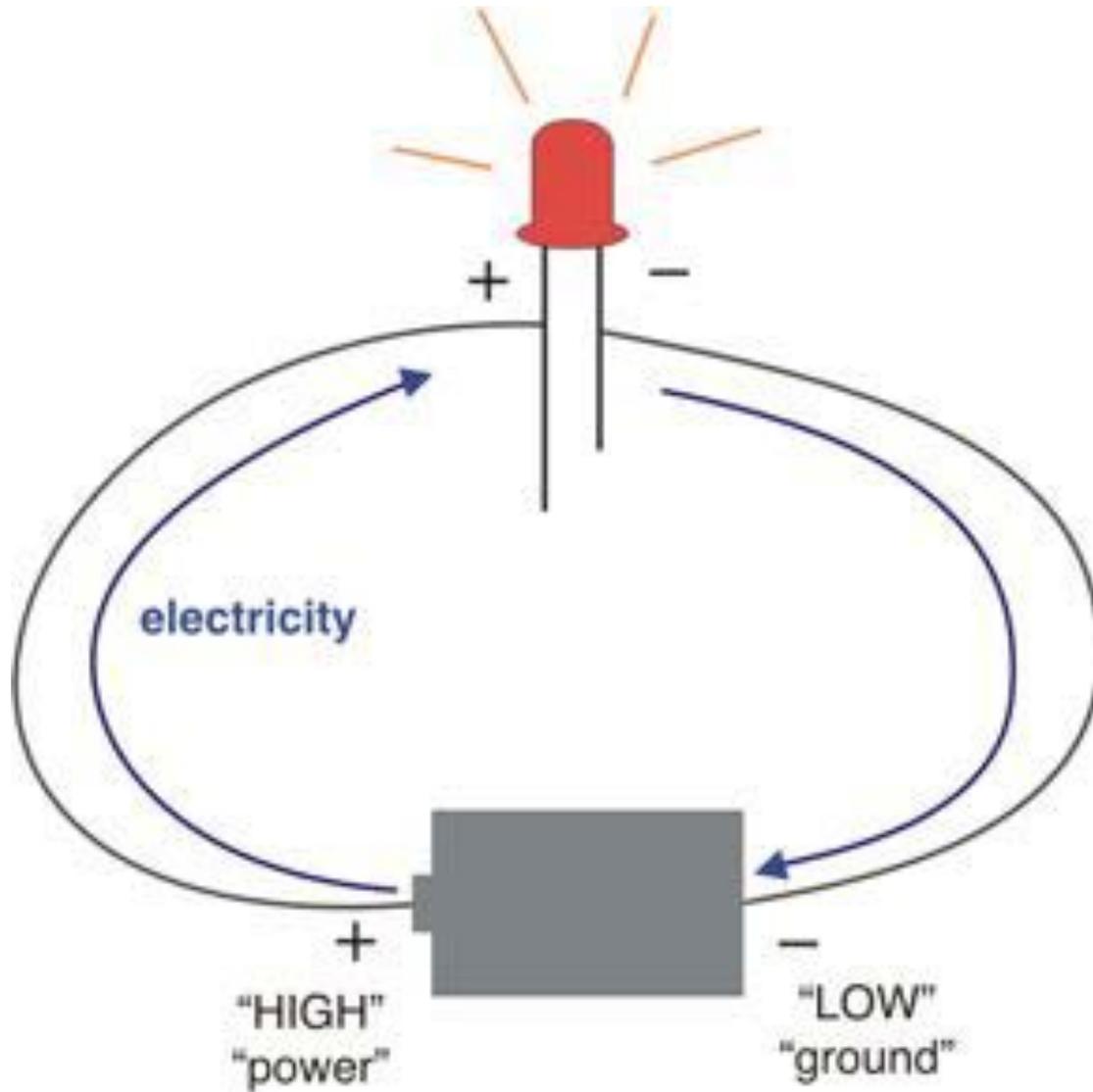
a simple circuit...with a switch



a simple circuit...with a switch



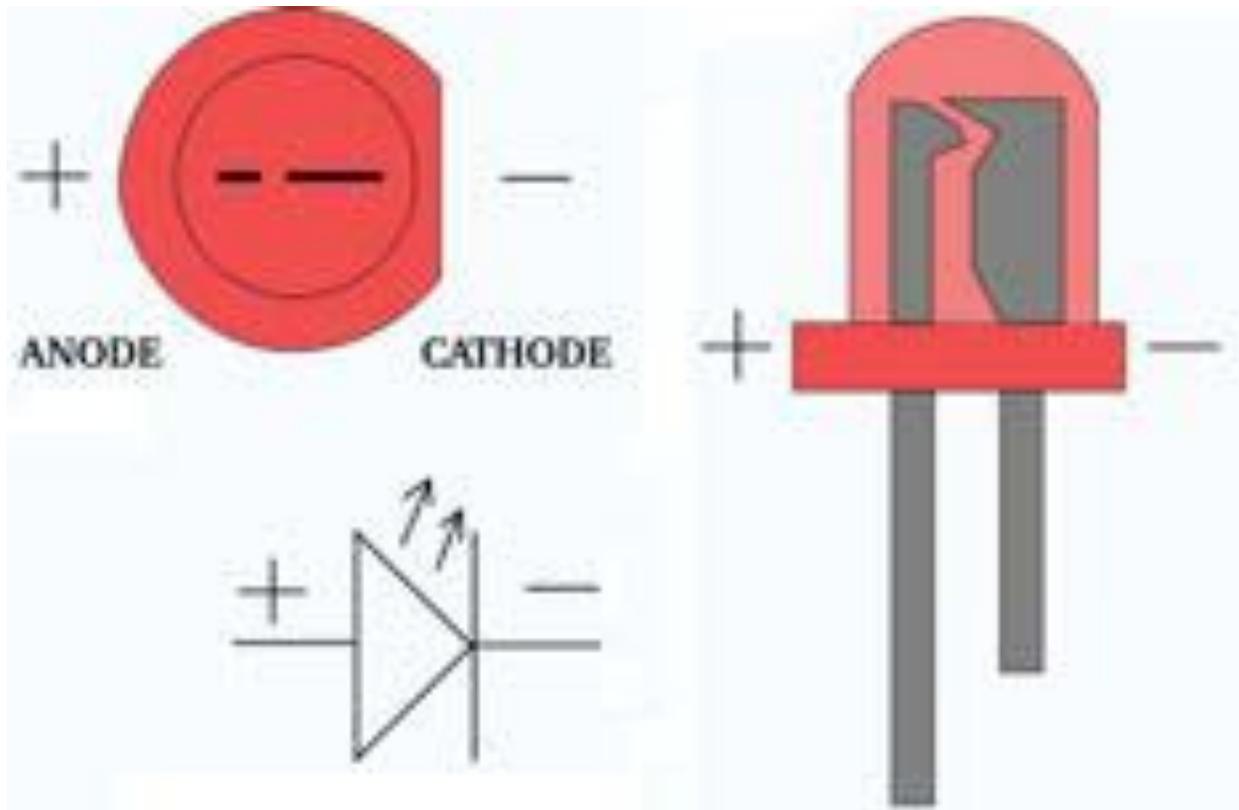
a simple circuit...with a switch

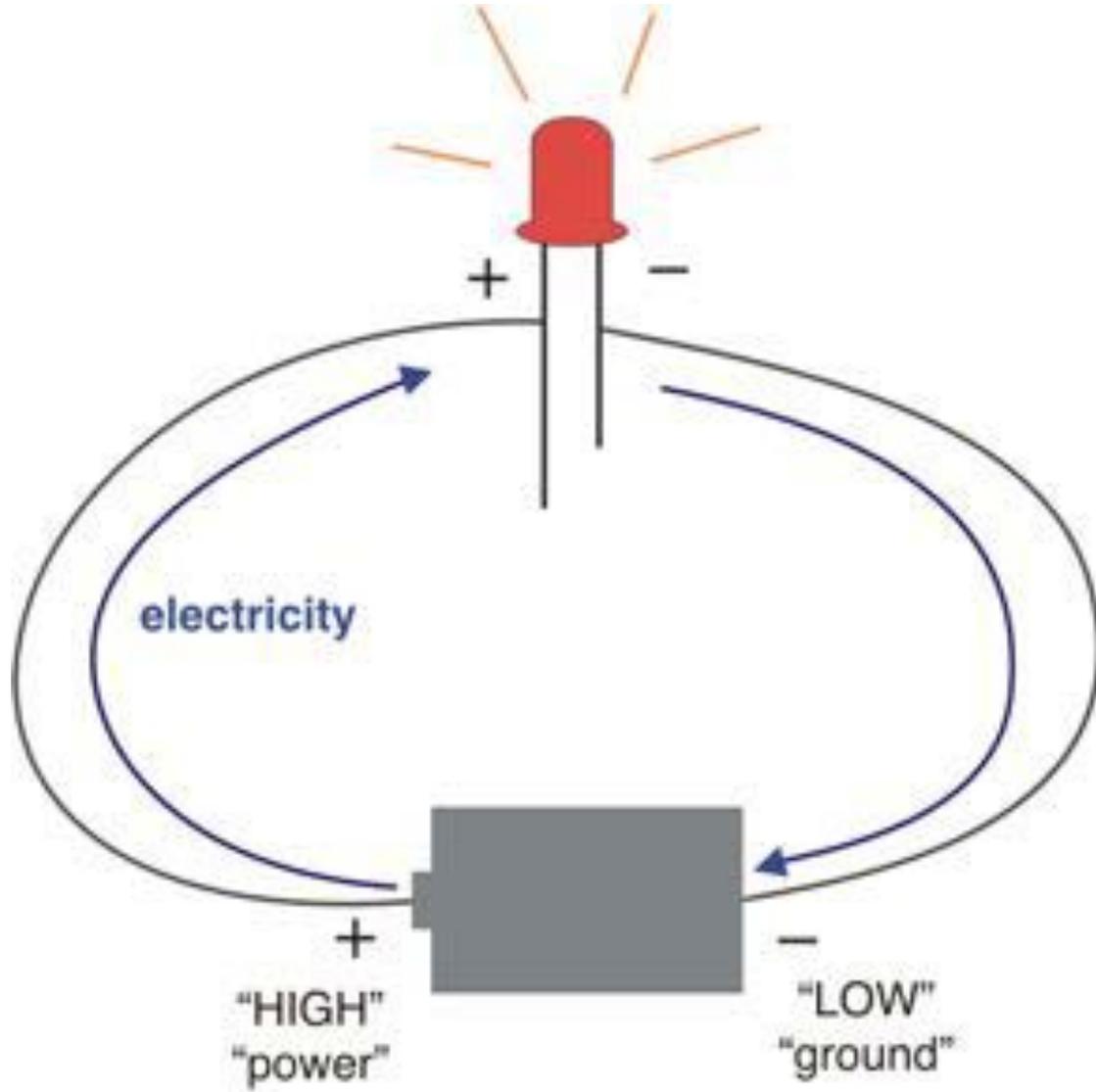


# LEDs

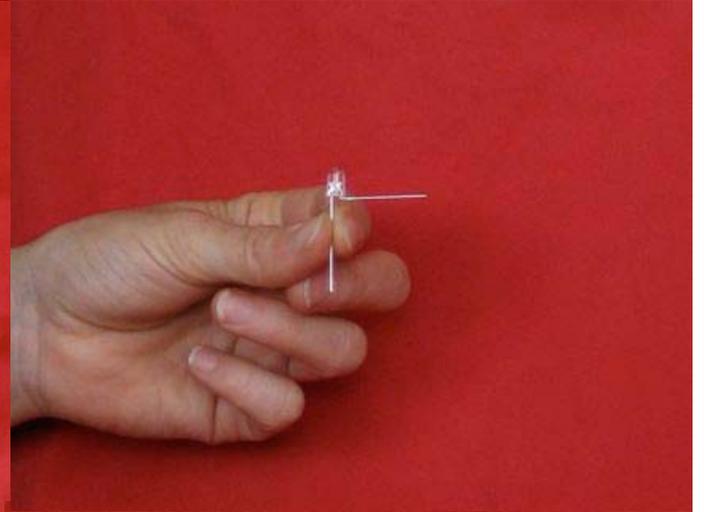


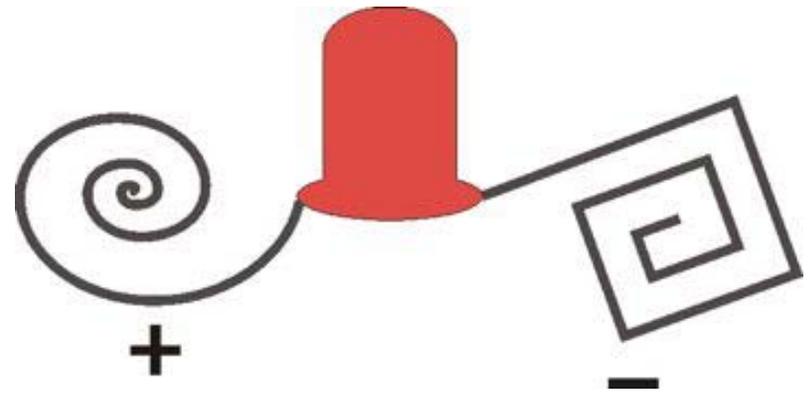
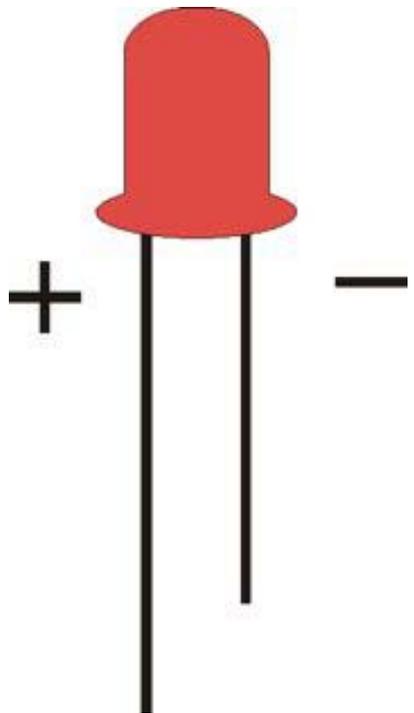
# LEDs

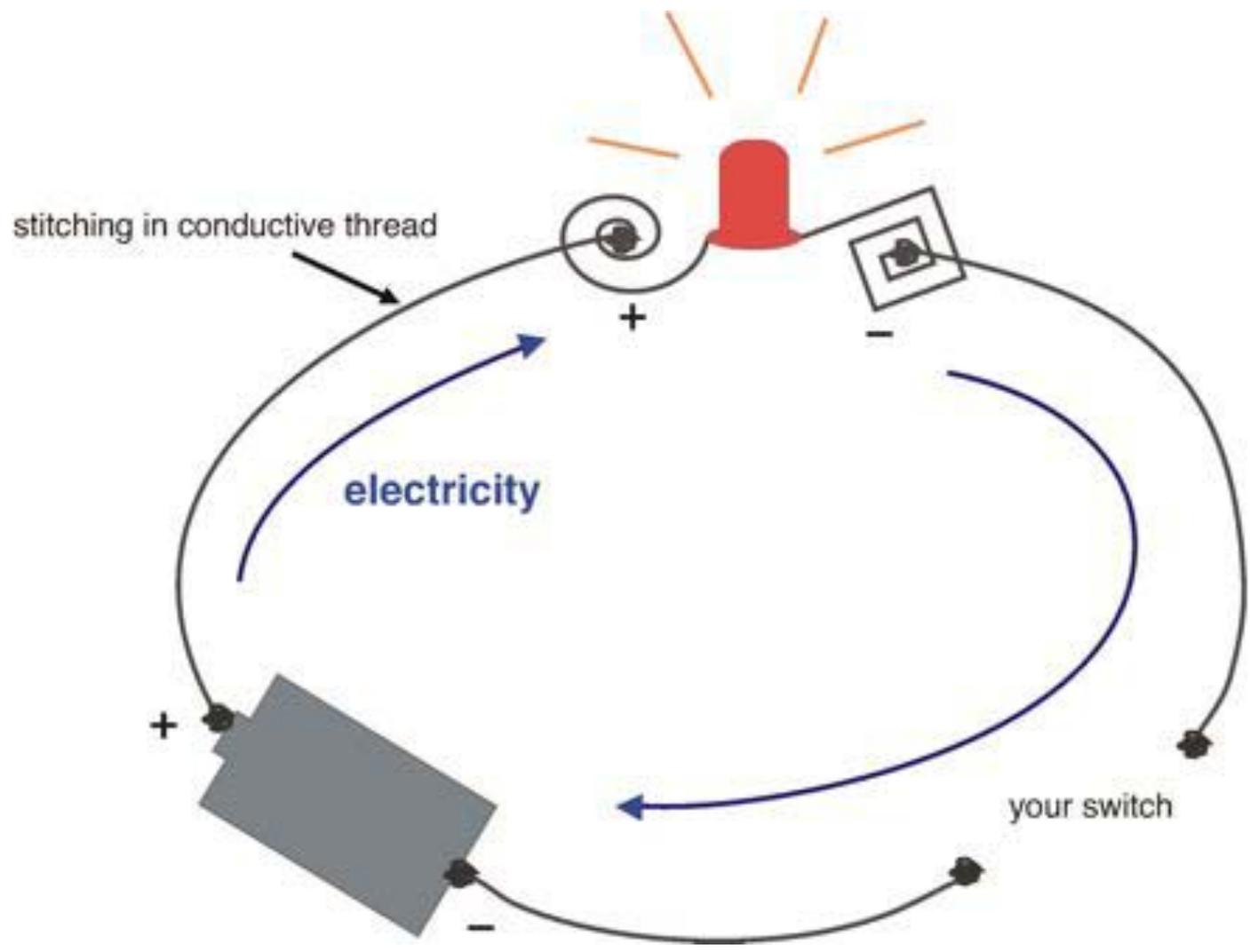


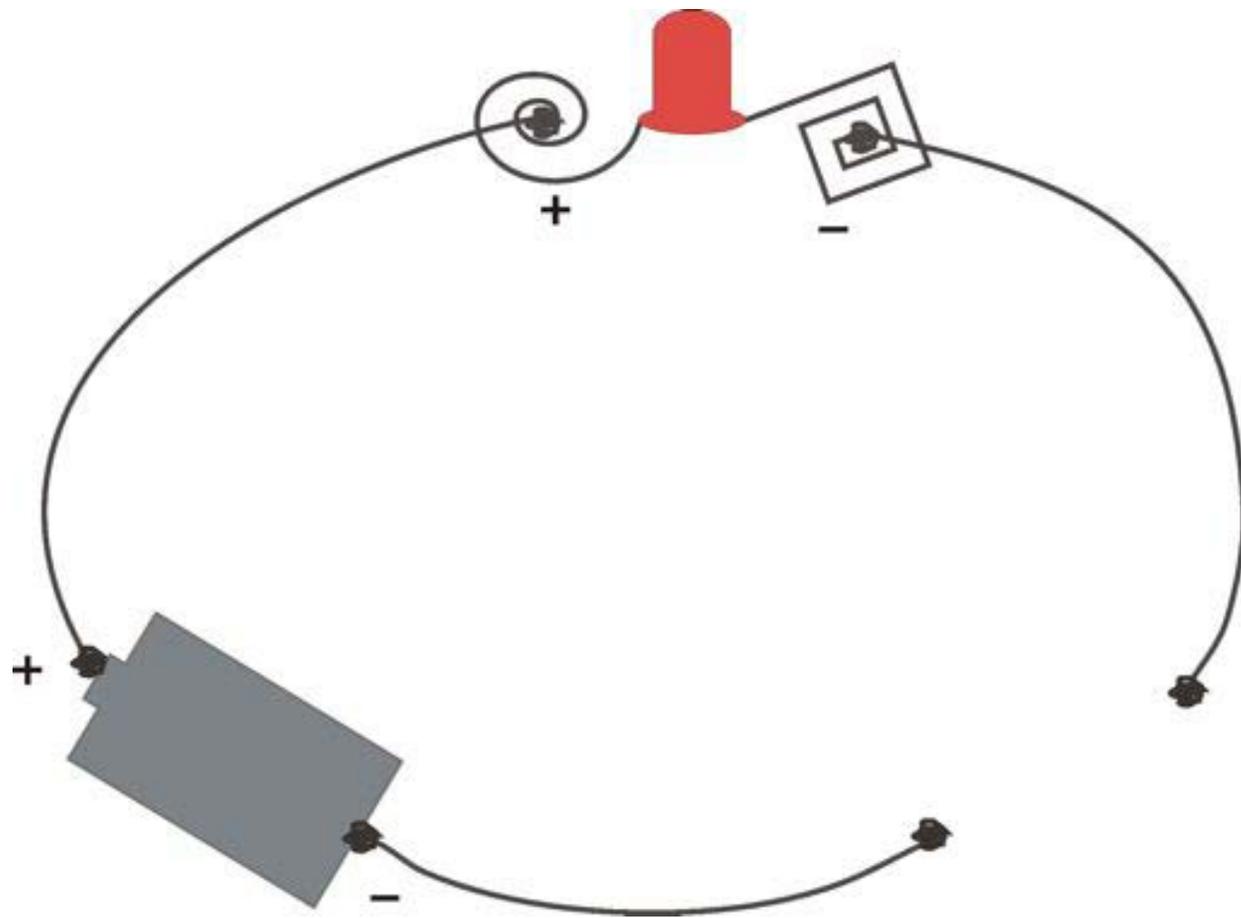


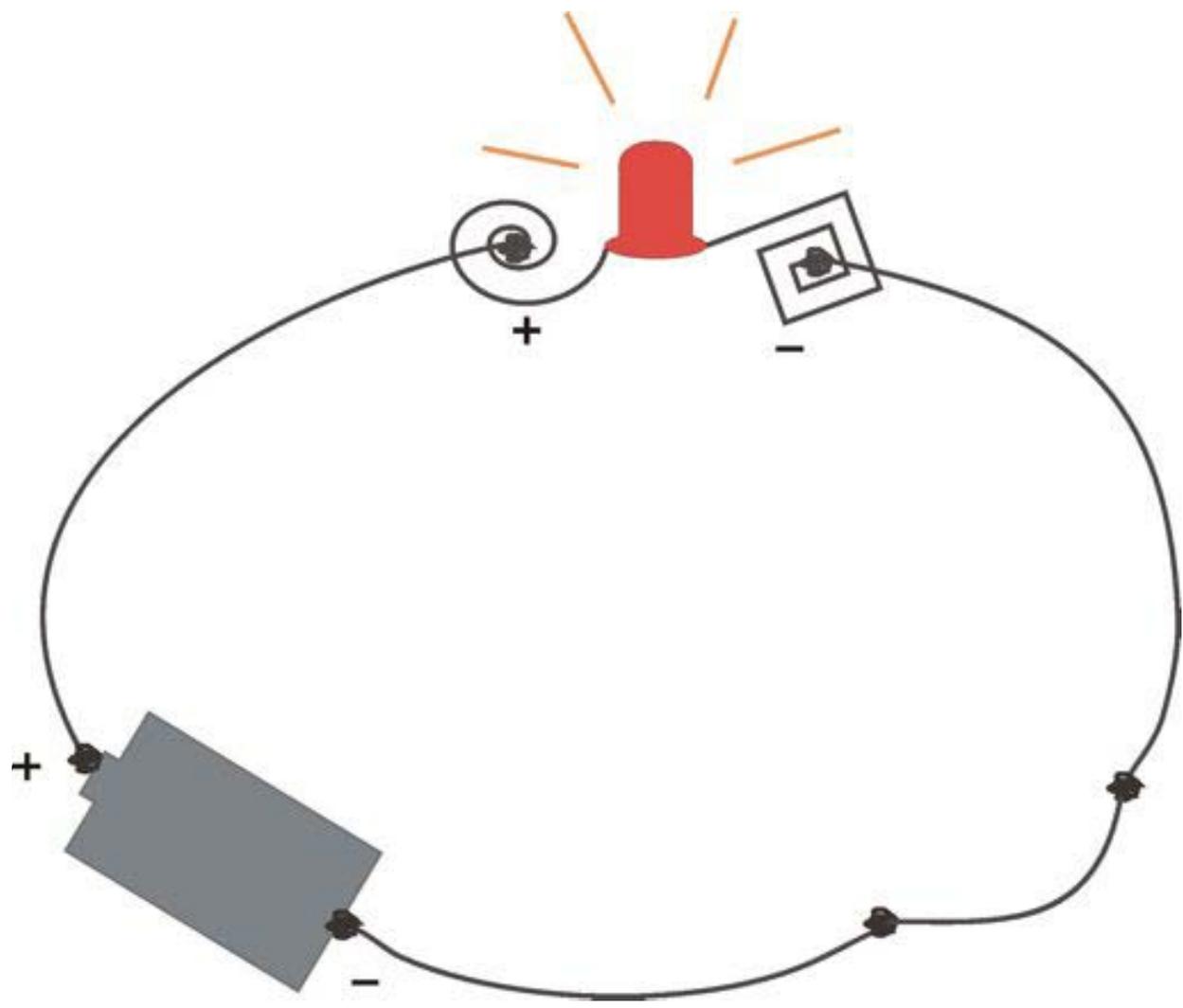


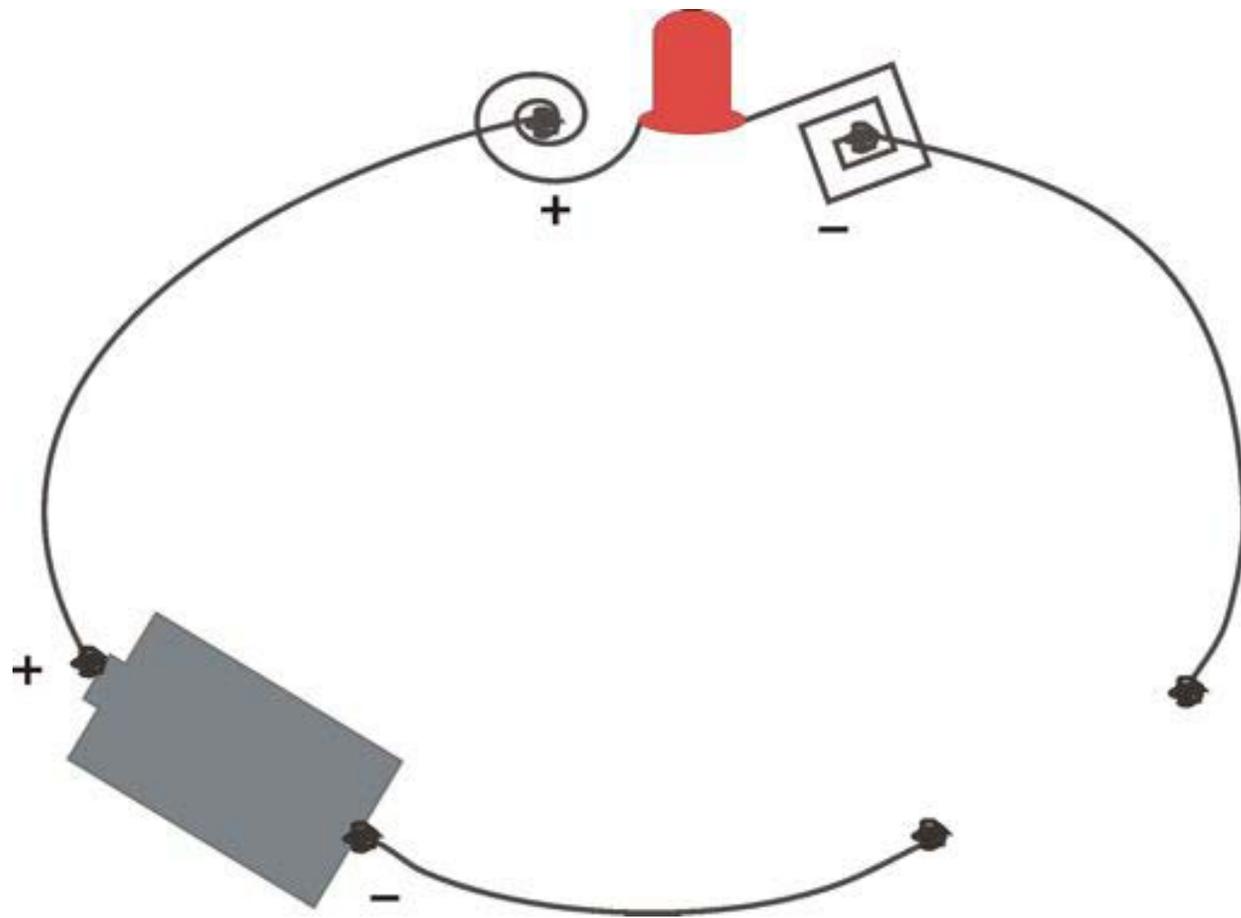


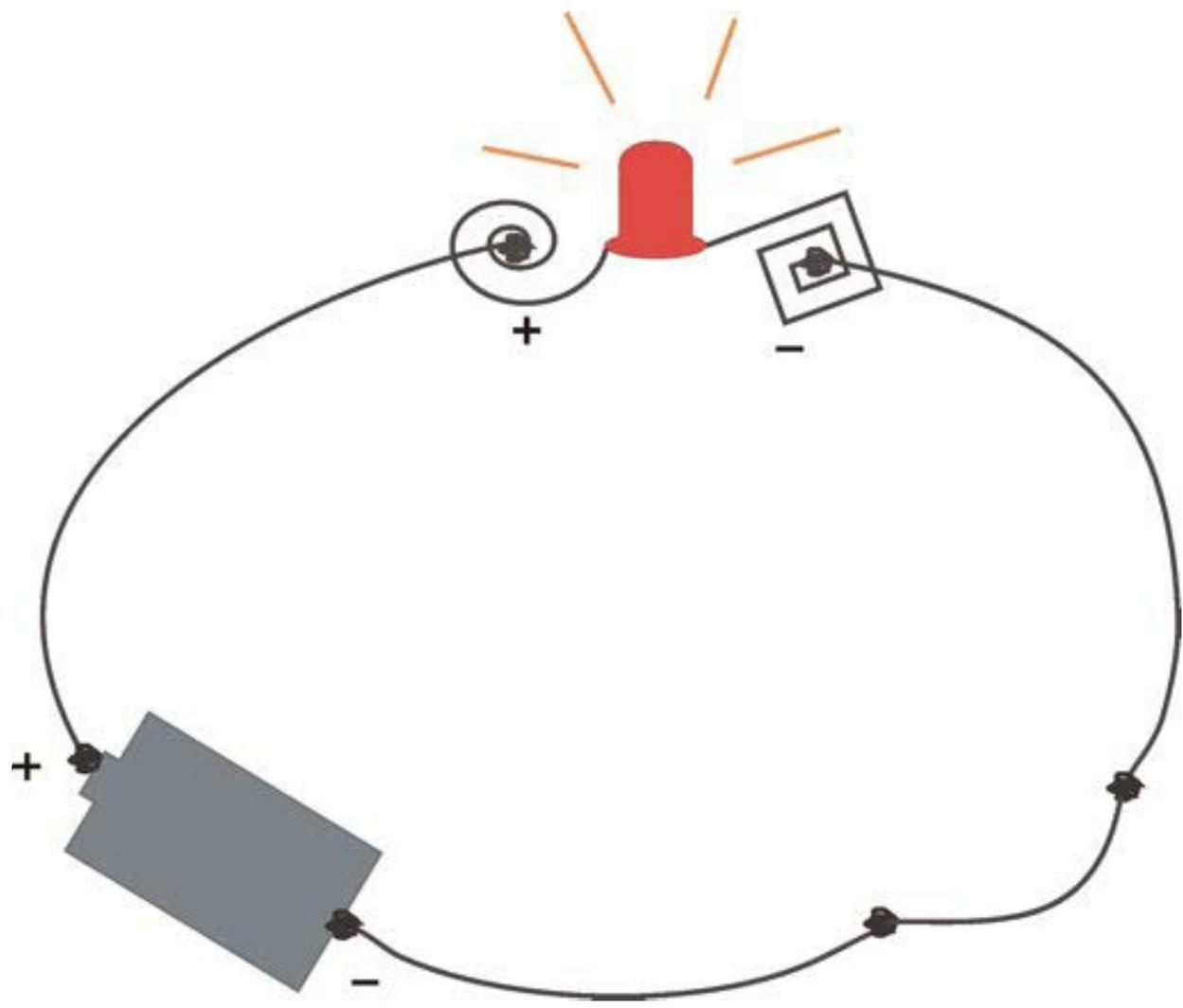












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