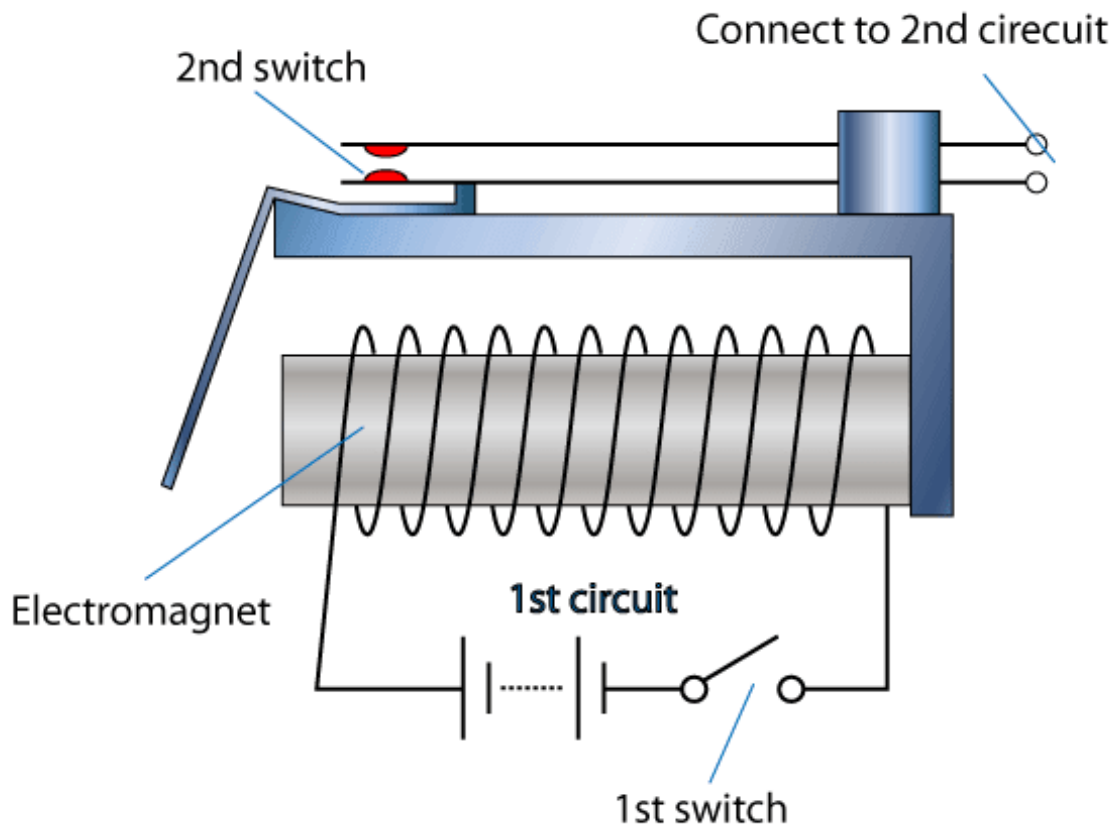


# Engineering Technology

## Electricity / Electronics

### Electromagnets

An \_\_\_\_\_ is a type of **magnet** in which the **magnetic field** is produced by an **electric current**. The \_\_\_\_\_ disappears when the current is turned off. Electromagnets usually consist of \_\_\_\_\_ . A current through the wire creates a magnetic field, which is concentrated in the hole in the center of the coil. The wire turns are often wound around a magnetic core made from a \_\_\_\_\_ material such as **iron**; the magnetic core concentrates the magnetic flux and makes a more powerful magnet.



The \_\_\_\_\_ of an electromagnet over a **permanent magnet** is that controlling the amount of electric current in the winding can quickly change the magnetic

field. However, unlike a permanent magnet that needs no power, an electromagnet requires a continuous supply of current to maintain the magnetic field.

\_\_\_\_\_ are widely used as components of other electrical devices, such as motors, generators, relays, \_\_\_\_\_ hard disks, MRI machines, scientific instruments, and [magnetic separation](#) equipment. \_\_\_\_\_ are also employed in industry for picking up and moving heavy iron objects such as scrap iron and steel.<sup>[2]</sup>

