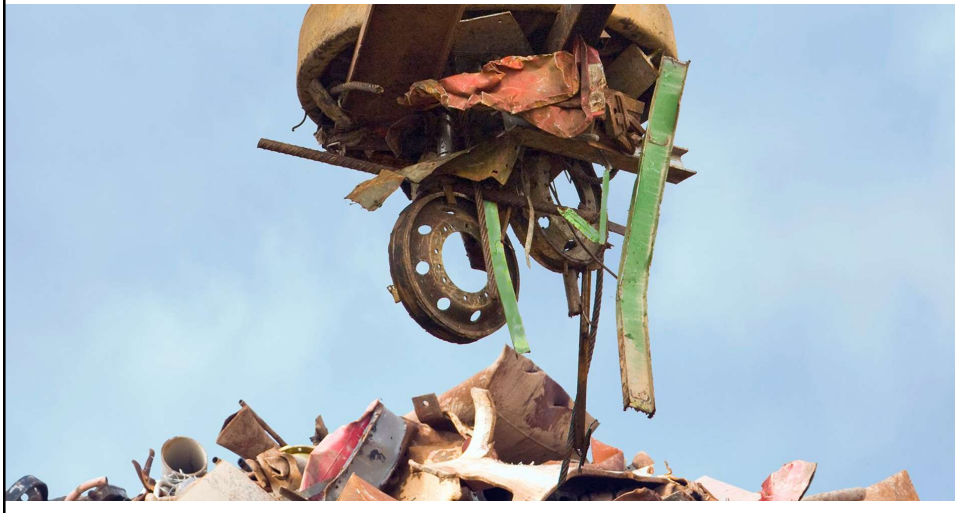


## Lesson 5: Electromagnets



1

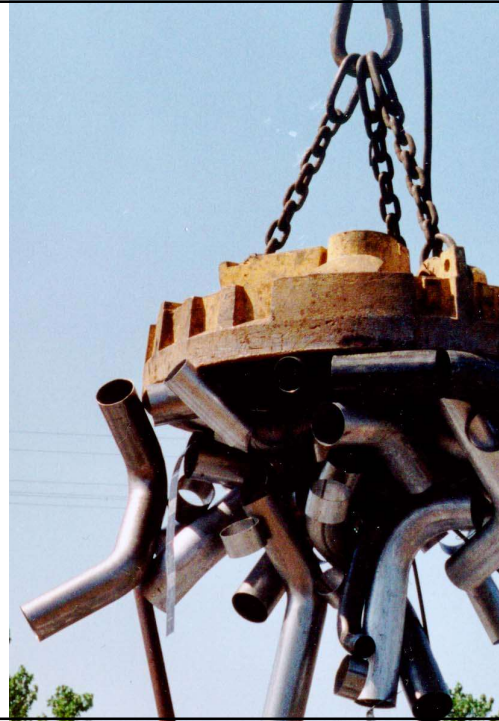


**An electromagnet is a type of temporary magnet that uses an electric current to produce a magnetic field**

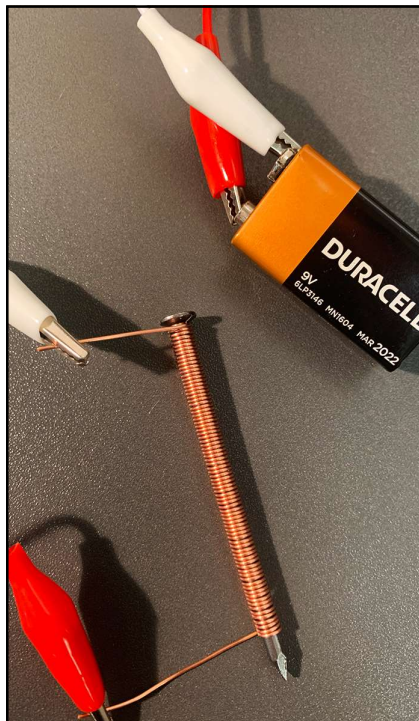
2

**Discovery  
Education Video:  
Junkyard  
Electromagnet**

Lifts a 2,081-pound domino with a junkyard magnet and demonstrates the basics of electromagnetic power.



3



**An electromagnet uses wire coiled tightly around a piece of ferromagnetic metal.**

**As electrical current passes through the wire, it creates a magnetic field.**

4

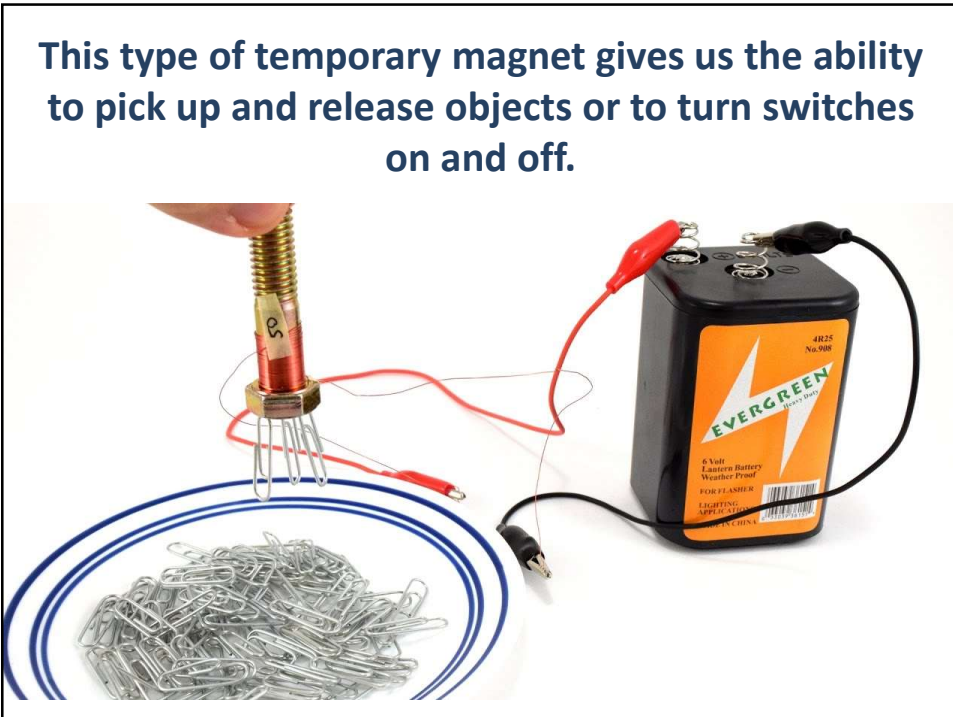


Because an electromagnet is a temporary magnet that uses electrical current, its magnetic field can be turned on and off.

This is useful for small electromagnets in doorbells to large ones used in scrapyards.

5

This type of temporary magnet gives us the ability to pick up and release objects or to turn switches on and off.



The image shows a hand holding a coil of wire connected to a battery. The coil is positioned over a plate of paperclips, and the paperclips are being lifted by the magnetic field of the coil. The battery is labeled 'EVERGREEN' and '4R25 No. 908'.

6

## **Electromagnets: Key Questions**

- 1. What is an electromagnet?**
- 2. How is an electromagnet different from a permanent magnet?**
- 3. In addition to the uses that were discussed in the lesson, what might be some other uses for electromagnets?**