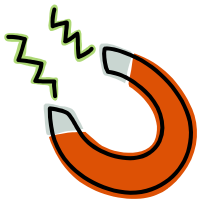
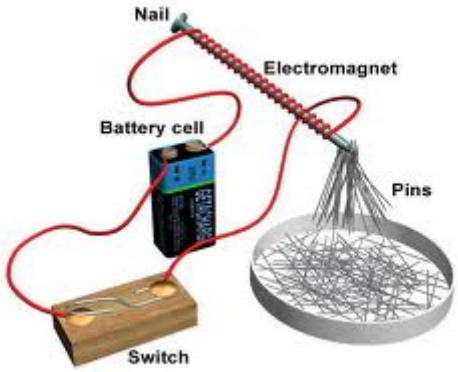
Electromagnetism

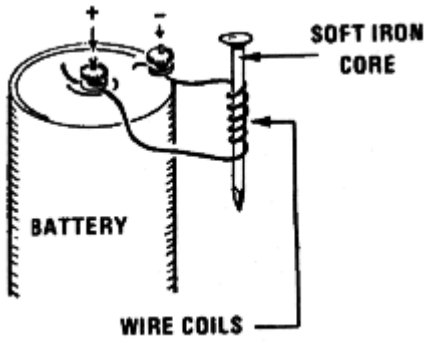
Electricity is closely related to an invisible force called *magnetism*. In fact, electricity and magnetism are two aspects of the same force, which modern science views as one of the four fundamental forces in the universe: electromagnetism.



An electromagnet is an object that acts like a magnet, but its magnetic force is created and controlled by electricity—thus the name *electromagnet*.



By wrapping insulated wire around a piece of iron and then running electrical current through the wire, the iron becomes magnetized. This happens because a magnetic field is created around a wire when it has electrical current running through it. Creating a coil of wire concentrates the field. Wrapping the wire around an iron core greatly increases the strength of the magnetic field.



We will ask the following questions:

- How can you create a magnet using electrical current?
- How can you make an electromagnet stronger?
- What do electromagnets and permanent magnets have in common? How do they differ?

Look for answers at this year's science expo!