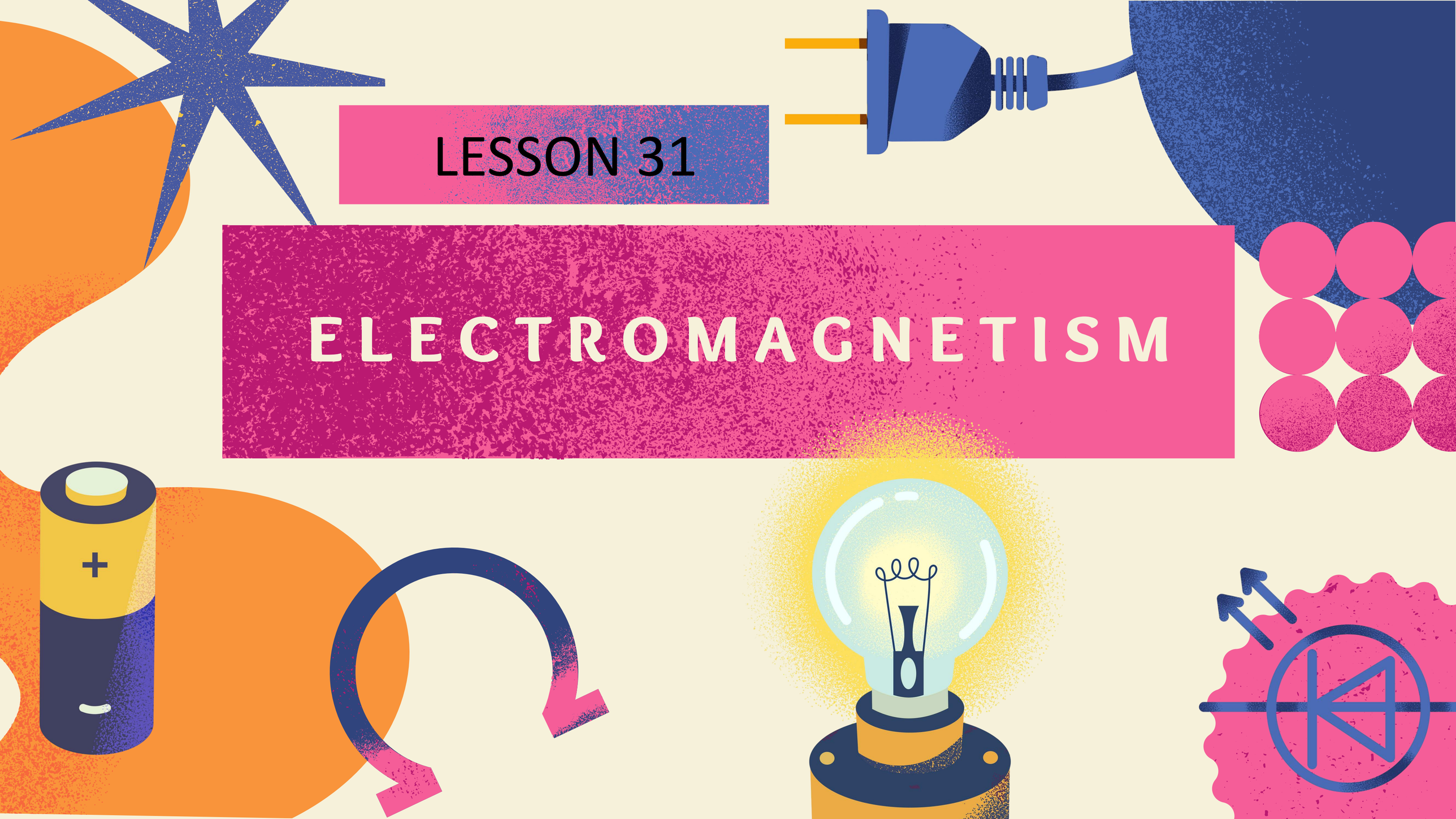
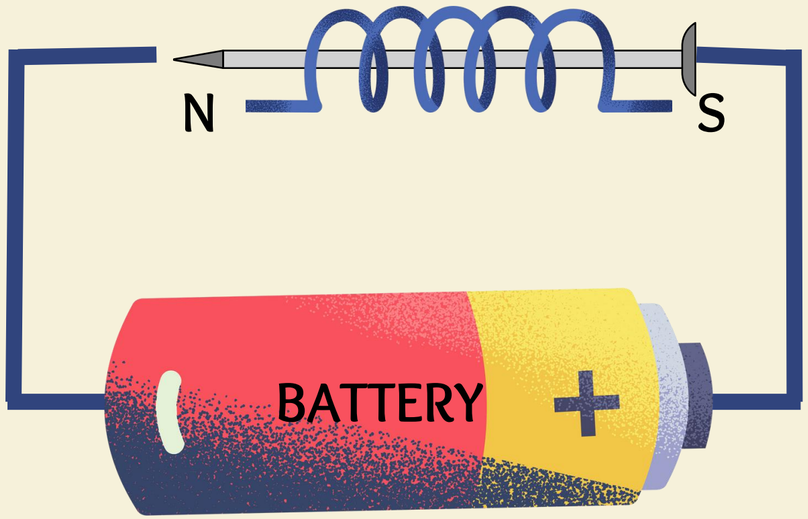
LESSON 31

ELECTROMAGNETISM



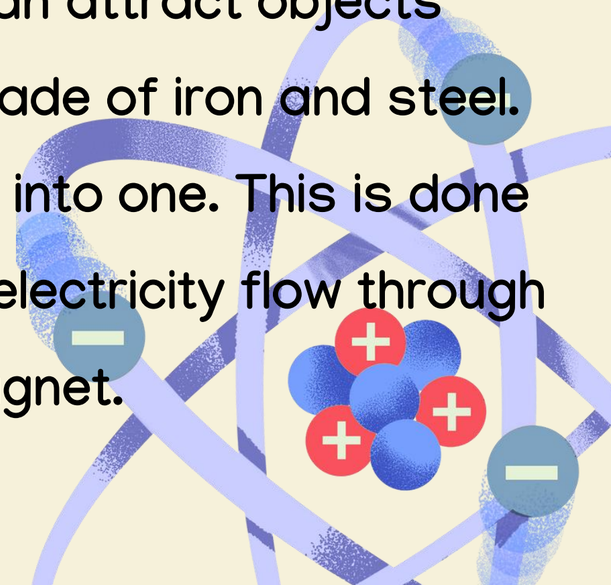
WHAT IS ELECTRICITY?



A Simple Electromagnet

Electricity and magnents are closely related to each other. Electricity can produce magnets while magnets can produce electricity.

A magnet is usually made of iron. It can attract objects such as pins, coins, and other materials made of iron and steel. A nail is not a magnet, but it can be turned into one. This is done by coiling a wire around it and then letting electricity flow through it. Doing this turn the nail into an electromagnet.



An electromagnet attracts like a real magnet. It can attract materials made of metals like pins, and thumbtacks. The iron nail acts as a magnet while electricity is flowing through the coil of wire.

When electricity stops flowing through the coil to the nail, can the nail still attract the pin and the thumbtacks? No, it can co longer attract the pin and thumbtacks. Electromagnets are temporary magnets. When electricity stops flowing through a coil of wires, the nail stops attracting any metal or magnetic material.

HOW TO MAKE AN ELECTROMAGNET STRONGER

An electromagnet can be made stronger by using more coils of wire. Each turn of the wire adds more force to the electromagnet.

The number of dry cells also effects the strength of an electromagnet. More dry cells mean more electrons flowing in the electromagnet and, therefore, stronger magnetism is produced.

The size of the iron core also matters. The greater the size of the iron core, the stronger, magnetism an electromagnet has.

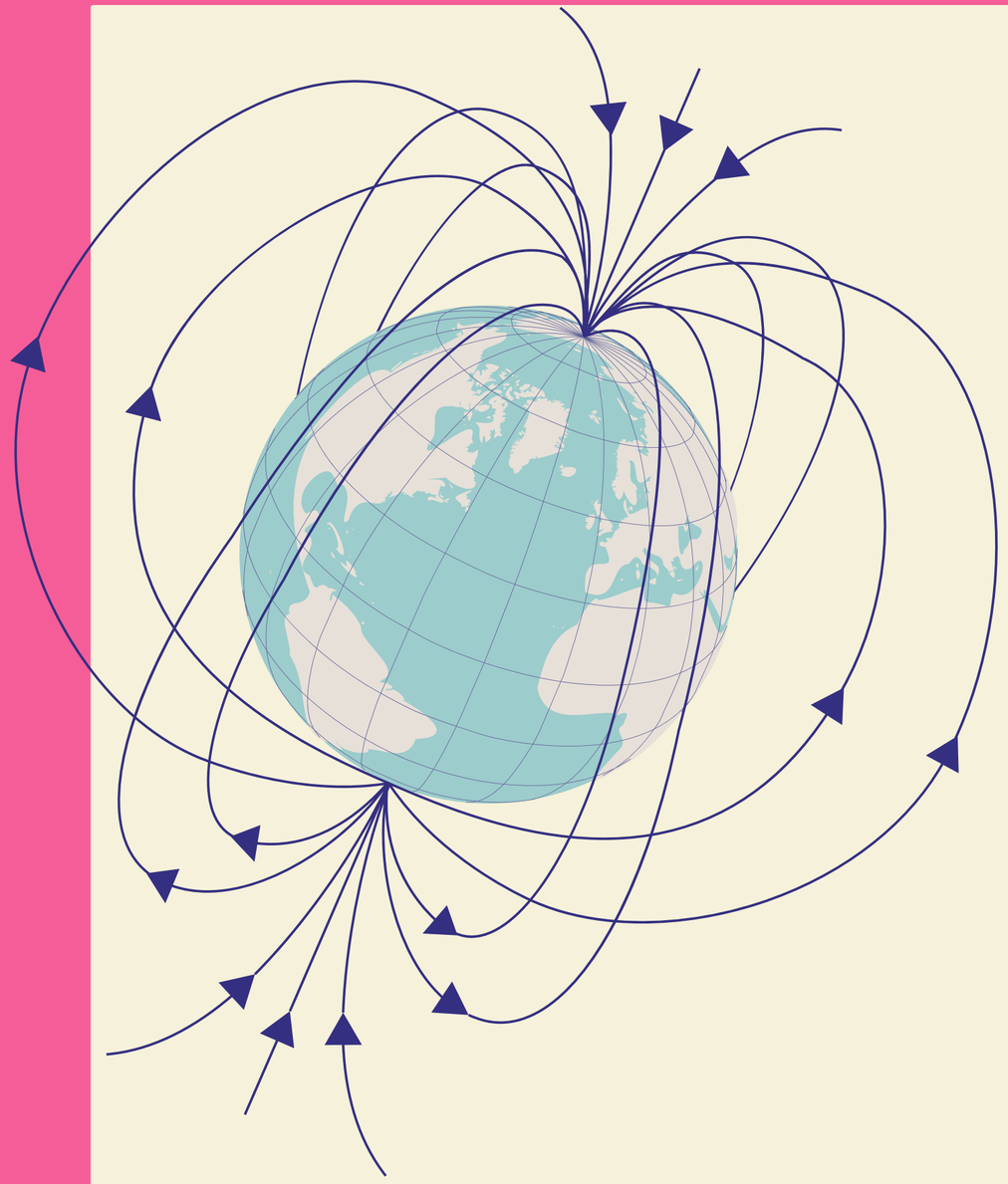
Uses of Electromagnets

Many appliances, moder gadgets, and even toys are made of electromagnets.

Electromagnets are used in transmitting signal through telephones, radio, and television.

Commercial establishment make use of generators, transformers, and motors which are made of electromagnets.

A crane that lifts heavy objects is also made of an electromagnet.



LET'S SUMMARIZE

- Conductors are material that allow heat and electricity to pass through them. Insulators are materials that do not allow heat and electricity to pass through the conductivity of materials depend on their composition. Metals are good conductors while nonmetals are insulators.

- A circuit is a complete path that allows free flow of electricity. A closed circuit makes a bulb light up because electricity flows through it. An open circuit cannot make a bulb light up because electricity does not flow.
- Series circuit is an electrical circuit where parts are arranged in a single path, while a parallel circuits an electrical circuit where its parts are arranged in several paths.
- An electromagnet is a temporary magnet that may be produced by making electricity flow through a wire coiled around an iron nail. Electromagnets are used in appliances, modern gadgets, toys, telephones, generators, transformers, among others.