I...Playing with Magnetism

Introduction:

What is magnetism? We have all had the experience of using simple magnets to hold notes on surfaces such as refrigerator doors. Magnetism is the force produced by magnets which does all of the "holding". Magnetism is also a very important force in nature which can move hot gases in stars, and in the space around Earth. The students will investigate magnetism and magnetic forces. The students will explore the attracting and repelling properties of magnets through hands on experiences.

Objectives:

- The students will investigate that magnets are attracted to items, which contain metals such as iron.
- The students will experience that a magnetic force is an invisible force.
- The students will explore a magnet's attracting and repelling properties.

Materials:

Magnets – one per student

Paper clips

String

Books

Ruler

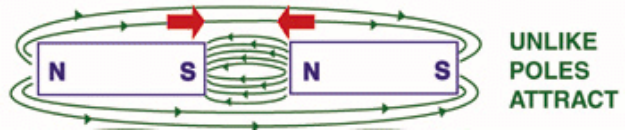
Various metal samples to test.

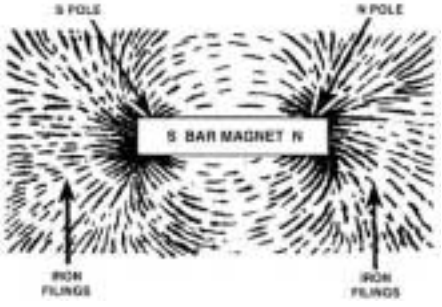
Key Terms:

Magnet - a metal that can attract certain other metals.

Magnetic Properties - refers to an item which can attract or repel items as a magnet does.

Poles - refers to the two areas of a magnet where the magnetic effects are the strongest. The poles are generally termed the north and south poles. Poles that are alike (both north or both south) will repel from each other, while poles that are different (one north, one south) will attract to each other.





Procedure:

- Give each student a magnet. Have the students explore the metallic samples that the magnet would be attracted to. The students should look at the objects and find common characteristics. The students should record their findings in a learning log.
- Tape one end of a piece of string to a desk; tie the other end onto a paper clip. Take a second piece of string and suspend the magnet from a ruler anchored with books. Adjust the level of books so that the distance between the magnet and the paper clip allows the clip to stand up without touching the magnet. The students should see that a magnetic force could be invisible. You can place pieces of paper or cloth between the clip and the magnet to show the strength of the magnetic force. Can the students find materials that block magnetic forces?
- With the string still attached, have the students try to raise the paper clip from the desk with a magnet. They should try to accomplish this without letting the magnet and paper clip touch. The students should keep a log of how they were able to accomplish this; what methods and strategies were used.
- Allow the students time to explore the attracting and repelling properties of magnets. They should be able to demonstrate that a magnet has two ends or poles that will attract or repel from other poles. Have the students observe what happens when two magnets are repelling from each other. The students should find a partner and discuss what they have seen and whether their classmate was able to discover the same properties.

Conclusions:

The students will learn the characteristics of magnetism. The students will demonstrate the attracting and repelling properties of magnets.