

SCIENCE

CLASS 6

CHAPTER 13-FUN WITH

MAGNETS

How were magnets discovered?

There was a shepherd named Magnes, who lived in ancient Greece. He use to take his herd of sheep and goats to the nearby mountains for grazing. He would take a stick with him to control his herd. The stick had a small piece of iron attached at one end. One day he was surprised to find that he had to pull hard to free his stick from a rock on the mountainside.

The rock was a natural magnet and it attracted the iron tip of the shepherd's stick. This is how natural magnets were discovered. Later on the process of making magnets from pieces of iron was discovered, these are known as artificial magnets.

Artificial Magnets –Magnets are made by man using iron by various processes are known as artificial magnets. Eg: Bar magnet, Horse shoe magnet

Natural Magnets –Magnets which are formed in nature in the form of rocks are called natural magnets. Eg: Magnetite , lode stone.

Magnetic materials – Magnetic material are those materials which get attracted to a magnet. Eg: Iron, nickel.

Non-magnetic materials- Non Magnetic material are those materials which donot get attracted to a magnet. Eg: Rubber, plastic, etc.

POLES OF A MAGNET

Iron fillings stick to a magnet when rubbed in a soil.

Let us perform an activity.

Spread some iron fillings on a sheet of paper. Now, place a bar magnet on this sheet. What do you observe?

We find that the iron fillings are attracted more towards the region close to two ends of a bar magnet. Poles of a magnet are said to be near ends.

FINDING DIRECTIONS

Magnets were known to people from ancient times. It is said that an emperor of china had a chariot with a statue of a lady that could rotate in any direction. It had an extended arm as if it was showing the way. It would rest in such a position that its extended arm always pointed towards south. By looking at the extended arm the emperor was able to locate directions.

Similarly if you take a freely suspended bar magnet, it will always come to rest in N-S direction. All the magnets have two poles whatever their shape may be.

This property of the magnet is very useful for us. For centuries travellers have been making use of this property of magnets to find directions.

Later on a device was developed based on this property of magnets. It is known as compass.

MAGNETIC COMPASS—A compass is a small box with glass covering on it. A magnetized needle is pivoted inside the glass box which can rotate freely and it comes to rest at north-south direction. So we can find out all the directions with the help of the compass.

HOW TO MAKE YOUR OWN MAGNET?

- A) Place the iron bar on the table.
- B) Place one end of the bar magnet near one of the ends or edges of the iron strip.
- C) Without lifting the bar magnet, move it along the length of the strip till you reach the other end.
- D) Lift the magnet and bring its poles to the same point of the strip from where you began.
- E) Repeat this process for 30-40 times.
- F) Iron strip will get converted into a magnet.

ATTRACTION AND REPULSION PROPERTY OF MAGNETS

Opposite poles of two magnets attract each other whereas similar poles repel one another.

HOW TO STORE A MAGNET?

To keep them safe, bar magnet should be kept in pairs with the unlike poles together.

They must be separated by a piece of wood , while pieces of soft iron should be placed across the ends.

For horse shoe magnet , one should keep a piece of soft iron across the poles.