Lesson Ideas

Magnetism

Samacheer Kalvi, Science, Class - VI, Unit -

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Unravelling the magic behind attraction !

Lesson Objectives:

- Identify magnetic and non-magnetic substances
- Exploring the different types of magnets based on their shape and size.
- Properties of magnet
  - o Poles - Magnets always have two opposite poles. North seeking pole is called North Pole. South seeking pole is called South Pole.
  - o Attraction and repulsion - Like poles repel and unlike poles attract each other. The forces of the magnet are strongest at the poles.
- Magnetic compass and its uses
- Uses of magnet in day to day life

Pre-requisites

Basic idea on force (contact and non-contact force) and all four directions North, South, East & West

Resource Plan: 4 to 5 periods (with evaluation)

Understanding magnetism as a non-contact force

Initiate a discussion with children on

1) What is a Magnet?

2) World without Magnets!

Identify magnetic and non-magnetic materials using materials in the environment

Give a few magnetic and non-magnetic materials like iron key, plastic, piece of wood, any metallic object etc. and observe their reaction with a magnet.

Once the children observe the reaction of various non- magnetic objects the teacher can have a discussion on how to find out the difference between iron bar and a magnetic bar.

Types of magnet based on shapes and size

Give different types of magnets and ask them to see the magnetic lines of forces using iron filings and draw them.

The children must be made to distinguish the part of the magnet that has more iron filings sticking to it and the part that has few or none.

This can be followed by a discussion with children on the magnetic lines of forces and strength of magnet.

Identifying the poles

Tie a thread to a bar magnet and see what direction it points to when it is at rest and map the poles as N and S. Rotate the magnet one more time and let it rest. Is it pointing in the same direction? This is to help students understand that in whichever way a magnet is rotated it aligns itself in the North-South direction.

Map the poles of different magnet.

The children are given differently shaped magnets (horse shoe, bar, ring, circle) and asked to map the poles. The N S alignment becomes clear when done with differently shaped magnets.

Magnetic role play: Children are assigned as North and South poles and made to stand apart in a jumbled manner. When the teacher shouts "magnet", the children with unlike poles must find partner and come together. This is to help them understand that North and North should not stand together thereby remembering that like poles repel and unlike poles attract.

Magnetic compass and it uses
Mariner's compass:

Introduce a scenario to children of them getting lost in ocean and ask how they will find their direction. How can magnet be used to find the direction? The teacher can talk about the way the ships find direction in the sea where there is no clear direction possible without the help of an instrument

Uses of magnet in day to day life
Building an electric motor.

Divide the children into small groups and give instruction to them as given in the worksheet to build a simple motor. Discuss on the how the motor works and its usage in daily life.

Finally the teacher talks about where all they see the uses of magnets in daily life and makes them list and categorize them.


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