PARAGON CONVENT SCHOOL

SECTOR : 24 B, CHANDIGARH

LESSON - 14

MAGNETISM

Summary:

- A magnet is a substance that attracts metals- such as iron, nickel and cobalt.
- The substances attracted by a magnet are called magnetic substances.
- The substances not attracted by a magnet are called non-magnetic.
- Magnet has two poles where its force is the strongest.
- A freely suspended magnet always points to the north-south direction. The end pointing to the north is called the north pole and the end pointing to the south is called the south pole.
- Like poles of two magnets repel each other whereas the unlike poles of two magnets attract each other.
- Magnets should be stored carefully and kept away from electrical gadgets such as television, microwave, audio systems and mobile phones.

Multiple Choice Questions (Page No. 169)

1. (d) 2. (d) 3. (b) 4. (b) 5. (d)

Multiple Choice Questions (Page No. 173)

1. (c) 2. (a) 3. (c)

SECTION A

Oral Questions

Q1.- What are magnets? Name a natural magnet.

Ans.- The substances having the property of attracting iron objects are known as

magnets. Magnetite is a natural magnet.

Q2.- In which direction does a freely suspended bar magnet align itself?

Ans.- A freely suspended magnet align itself in north-south direction.

Q3.- Why do travellers and navigatots use the magnetic compass?

Ans.- Travellers and navigators use the magnetic compass to know the directions while travelling.

Q4.- What is the quickest way of picking the iron pins that have been spilled on the floor?

Ans.- The quickest way of picking the iron pins that have been spilled floor is by using magnets.

Science Quiz

Q1.- Where do the maximum iron filings gets attracted in a magnet?

Ans.- The maximum iron filings get attracted to the poles of a magnet.

Q2.- What are the soft iron pieces used to store a magnet called?

Ans.- Magnetic keepers

WORKSHEET

Tick (√) the correct options

1. (c) 2. (c) 3. (a) 4. (b) 5. (c)

Circle the odd ones. Give reasons for your choice

1. Iron Steel Plastic Nickel

Ans.- Plastic → It is a non-magnetic material, whereas others are magnetic materials.

2. Copper Iron Pencil Rubber

Ans.- Iron → It is a magnetic material, whereas others are non- magnetic materials.

3. Rubbing Hammering Heating Dropping

Ans.- Rubbing → It is a method to induce magnetism, whereas others are methods of demagnetisation.

4. Floppy CD Video tapes Television

Ans.- Television → It's surface is not coated with magnetic material to store data, whereas others have magnetic surface for storage of data.

Fill in the blanks

1. magnetic 2. magnetic 3. two 4. repel, attract 5. centre

Match the following

1. (d) 2. (a) 3. (b) 4. (c)

SECTION B

Multiple Choice Questions

1. (c) 2. (a) 3. (b)

Very Short Answer Questions

Q1. Mention three uses of magnets.

Ans.- (i) Magnets are used to separate iron and steel from junk materials.

(ii) Information is stored in magnetic strips of credit cards and Atm cards.

(iii) Data, sound and images are stored on special surface coated with magnetic material in CDs and floppies.

(iv) In scrapyards, magnets are used to separate iron and steel from junk materials.

Q2.- Name two objects that are attracted by magnets.

Ans.- Iron and steel / nickel / cobalt

Q3.- Name a natural magnet.

Ans.- Magnetite

Q4.- What is the effect of heating on magnets?

Ans.- On heating, the magnets lose their property of magnetism.

Short Answer Questions

Q1.- What are magnetic substances?

Ans.- The substances that are attracted by the magnets are called magnetic substances. Eg.-Iron, steel, nickel and cobalt are magnetic substances.

Q2.- What are non-magnetic substances?

Ans.- The substances that are not attracted by the magnets are called non- magnetic substances. Wood, stone, leather, plastic, aluminium and copper are non-magnetic substances.

Q3.- Differentiate between artificial and natural magnets.

Ans.-

Natural Magnets	Artificial Magnets
(i) These are formed in nature.	(i) These are prepared by humans.
(ii) They generally have low magnetic power.	(ii) They generally have more magnetic power than natural magnets.

Q4.- What is meant by directive property of a magnet?

Ans.- A freely suspended magnet always rests pointing in the north-south direction. This property of a magnet is called directive property. The end of a magnet that points towards north is called north pole of the magnet, the other end that points towards the south is called the south pole of the magnet.

Q5.- Prove that repulsion is the sure test for magnetism.

Ans.- We take a magnet and suspend it with the help of a thread. Now, bring one end of a metallic bar near one pole of the suspended magnet at a time. If one end of

the metallic bar is attracted and the other end is repelled, the metallic bar is a magnet. If both the ends of the metallic bar are attracted, it is not a magnet.

Q6.- Rashmi is watching her favourite TV show. Her grandmother asks her to look for her sewing needle which has fallen on the ground. Rashmi brings her magnet and searches the needle.

A) Which property of magnet do you think helped Rashmi find the needle?

B) Which value is displayed by Rashmi?

Ans.- (a) Attractive property of magnet helped Rashmi to find the needle.

(b) Rashmi is caring, helpful and obedient.

Long Answer Questions

Q1.- How can you make your own magnetic compass?

Ans.- To make a magnetic compass

Things needed: A sewing needle, a bar magnet, a cork, a cup and a rubber

Method: We can magnetise a sewing needle using a bar magnet. Pass the magnetised needle through a small piece of cork or rubber. Place this cork containing the magnetised needle in a cup containing water. Make sure that the needle does not touch water. When the needle comes to rest, it points to the north-south direction. Rotate the cork with the needle inserted in it in different directions.
Observation: You observe that the needle always points in the North- South direction, when the cork stops rotating. The magnetic compass is ready for use.

Q2.- What is meant by the poles of the magnet? Where are the poles of a bar magnet located?

Ans.- The ends of a magnet where the magnetic force is strongest are called its poles. A magnet always has two poles. The two poles of a magnet are near its free ends. The two poles of a magnet are always different. One pole of a magnet is called north pole and the other pole of a magnet is called south pole.

Q3.- What happens when the north pole of a magnet is brought near - a) the north pole a freely suspended magnet

b) the south pole of a freely suspended magnet?

Ans.- (a) It repels the freely-suspended magnet.

(b) It attracts the freely-suspended magnet.