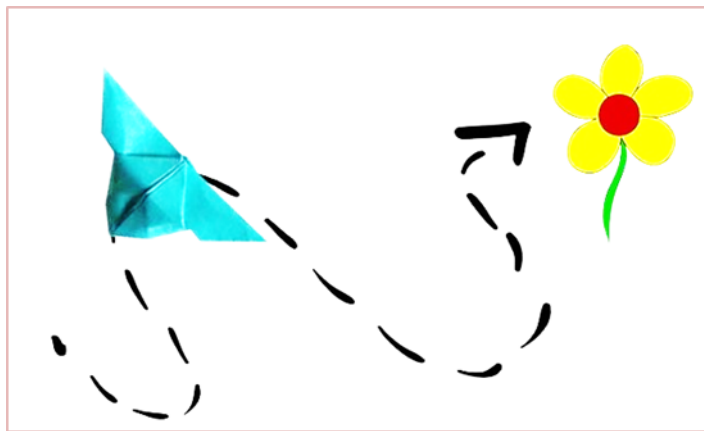


Self- Study Pack

- Subject – Science
- Grade – 6
- Term – 2nd Term
- Unit – Magnets
- Learning Outcomes –
 - Understand that magnets exert a force on certain substances.
 - Identify magnets and their poles.
 - State that like poles repel and unlike poles attract.
 - Conducts simple activities to experience the magnetic effect
 - Prepare workable devices to show magnetic effect.
 - Test the strength of magnets collected from the surrounding.
 - Perform activities to demonstrate attraction and repulsion of magnets.
 - Use repulsion to differentiate a magnet from other substances.

Activity -1

- ❖ Draw a flower on a cardboard sheet and mark the path to the flower as illustrated in the diagram.
- ❖ Make a butterfly with a piece of cardboard and fix a safety pin to its undersurface.
- ❖ Use a magnet to carry the butterfly to the flower.



For your knowledge.....

Magnets are used for various day to day life activities.

Activity -2

- ❖ Make a list of equipment/places that use magnets at your home.

Ex: - Door of the refrigerator

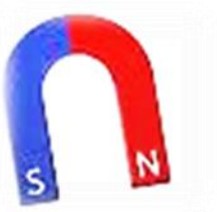


- ❖ Let us investigate the things attract to magnets.
 - Things needed – A magnet, iron nails, safety pins, piece of aluminium, a copper plate, a coin, piece of wood, piece of paper, piece of plastic, a needle, an ear ring, some sand, a pencil tip, piece of lead, a tin lid
 - Method – Bring the above materials/objects closer to the magnet. Fill in the table given below in relation to your observations.

Things attract to the magnet	Things do not attract to the magnet

Activity 4

- ❖ Identify the magnets and match the pictures with their names accurately.



Bar magnet



U - Magnet



Tabular Magnet



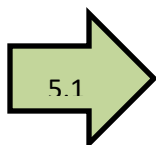
Horse-shoe Magnet



Ring Magnet

Activity 5

- ❖ Let us identify poles of magnets.

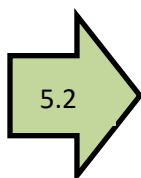
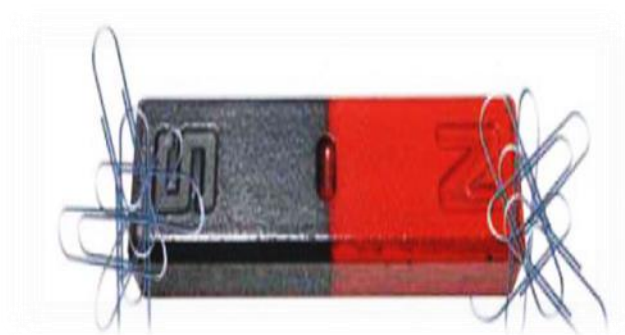


Things Needed: - iron fillings, safety pins, a magnet, a white paper

Method: - Spread iron fillings/safety pins on the white paper.

Keep the magnet under the paper

Observe well.



Things needed: - A compass, a bar magnet

Method: - Keep the compass on a table. Bring a magnet in which the poles are not marked close to the compass.

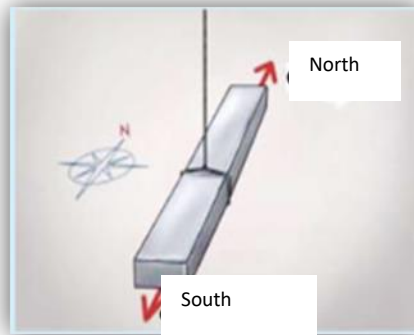


5.3

Things needed: - A bar magnet, a piece of thread, a compass

Method: - Hang the magnet with a piece of thread and allow it to rotate freely.

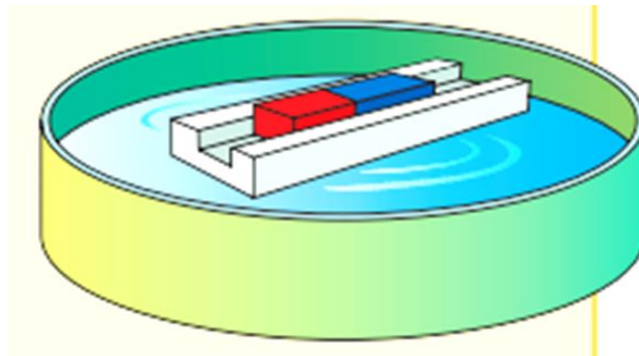
When the magnet is at rest, find the direction that the magnet has turned with the help of a compass.



5.4

Things needed: - Two bar magnets, a Styrofoam canoe, and a basin of water

Method: - Keep one bar magnet on the Styrofoam canoe and let it to float in the basin of water. Then try to move the canoe as you wish with the help of the other bar magnet.



Fill the following table with the observations that you obtained in above activities.

Activity	Observations
5.1	
5.2	
5.3	
5.4	
5.5	

According to Activity 5.1

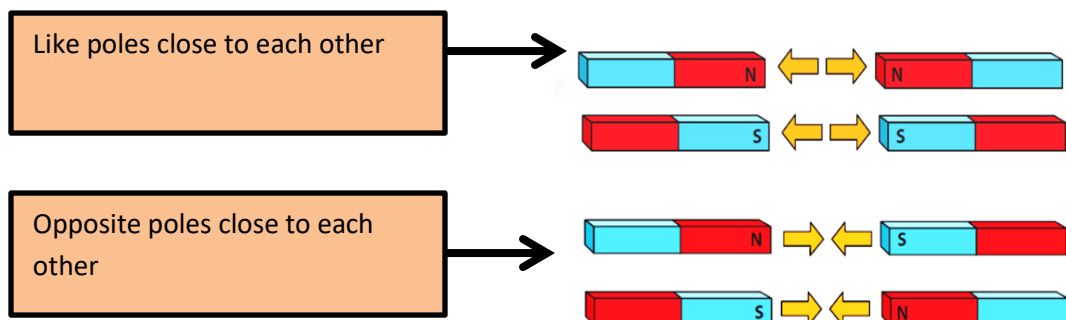
- ✓ More iron fillings got attracted to the (two ends/middle) of the bar magnet.
- ✓ The two ends of the magnet are called (magnetic terminals/ magnetic poles).

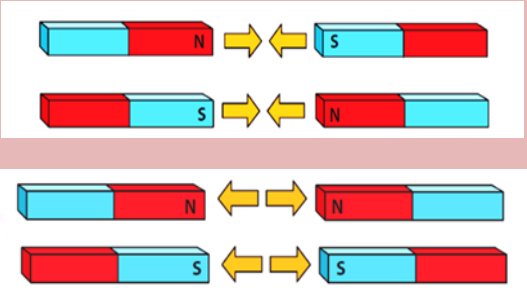
According to Activities 5.2/5.3/5.4,

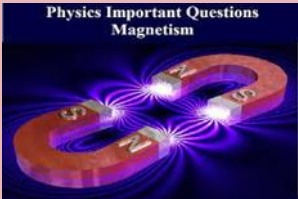
- ✓ A magnet always lies still between the (west-east/north –south) direction when it is hung freely.
- ✓ The end of the magnet points to north is the (north pole/south pole) and the end of it points to south is the (north pole/south pole).

Activity 6

- Let us investigate the interactions between magnetic poles.
 - Things needed – Two magnets with poles marked
 - Method
 - As illustrated in the diagram, bring the like poles of the two magnets close to each other and observe what happens.
 - Then bring the opposite poles of the two magnets close to each other and observe what happens.







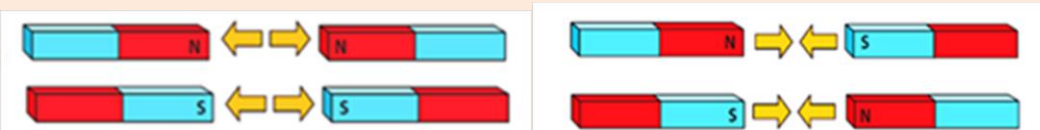
Like poles repel each other while the opposite poles attract each other

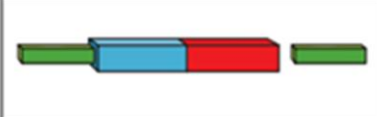
Activity 7

- Let us differentiate a magnet from several different substances.
- Things needed – An iron nail, a pencil, a magnet on which poles are not marked, a magnet with poles marked.
 - Bring the N- pole of the marked magnet close to above substances and observe.
 - Then bring the S-pole of the marked magnet close to them and observe.

Substance	When the N- pole is brought closer	When the S- pole is brought closer
Iron nail		
Pencil		
Small bar magnet		

For your knowledge



	Attract to both poles of the magnet
	Neither attracts nor repels
	N- Pole repels S – Pole attracts

Repulsion between magnets can be used for differentiating a magnet from several other substances.

- ✓ If you are provided with a coin, magnet and a pen clip which are separately wrapped in pieces of paper, try to identify them with the help of a bar magnet with poles marked.

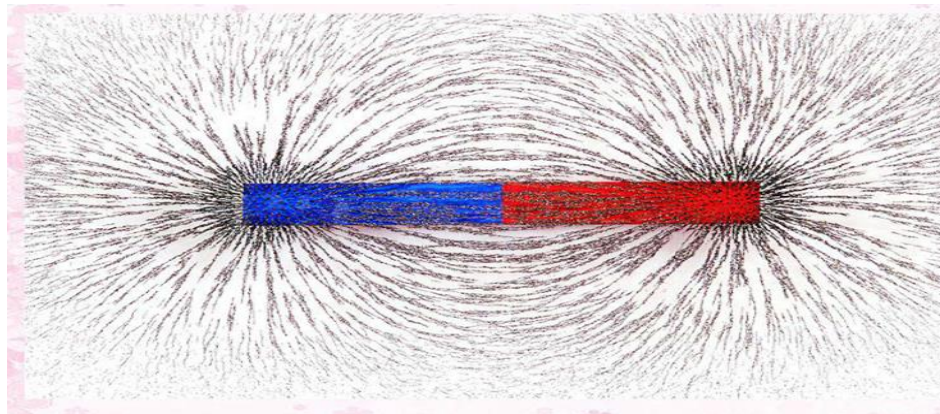
Activity 8

- Let us investigate the magnetic power that spreads around a magnet.

Things needed – Some iron fillings, a bar magnet

Method

- Keep a bar magnet on a table and keep a white paper on the magnet.
- Spray iron fillings little by little.
- Tap the paper slowly with your fingertips.
- Observe the area where magnetic power spreads.

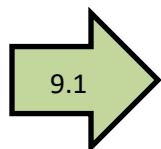


For your knowledge.....

Area that the magnetic power is spread around a magnet is called the **magnetic field** of that magnet.

Activity 9

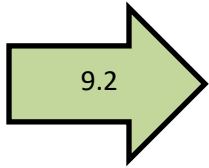
- Let us demonstrate Magnetic Force



Things needed: - Magnet, file clips

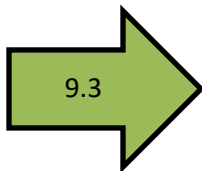
Method: - Keep some file clips on a table. Keep the magnet on upper side of your palm. Bring the palm closer to the file clips.





Things needed: - A glass of water, a file clip, a magnet

Method: - Put the file clip into the glass of water. Try to take it out of the glass of water with the help of the magnet.



Things needed: - A metal spoon, a magnet

Method: - Try to lift the metal spoon with the help of a magnet.



Perform and enjoy following activities while broadening your understanding of magnetic force.

- Let us go fishing by magnetic boat



- Let us show the butterfly the path to the flower.



- Let us lift up the file clips in the bottle.



- Let us go round the sky.

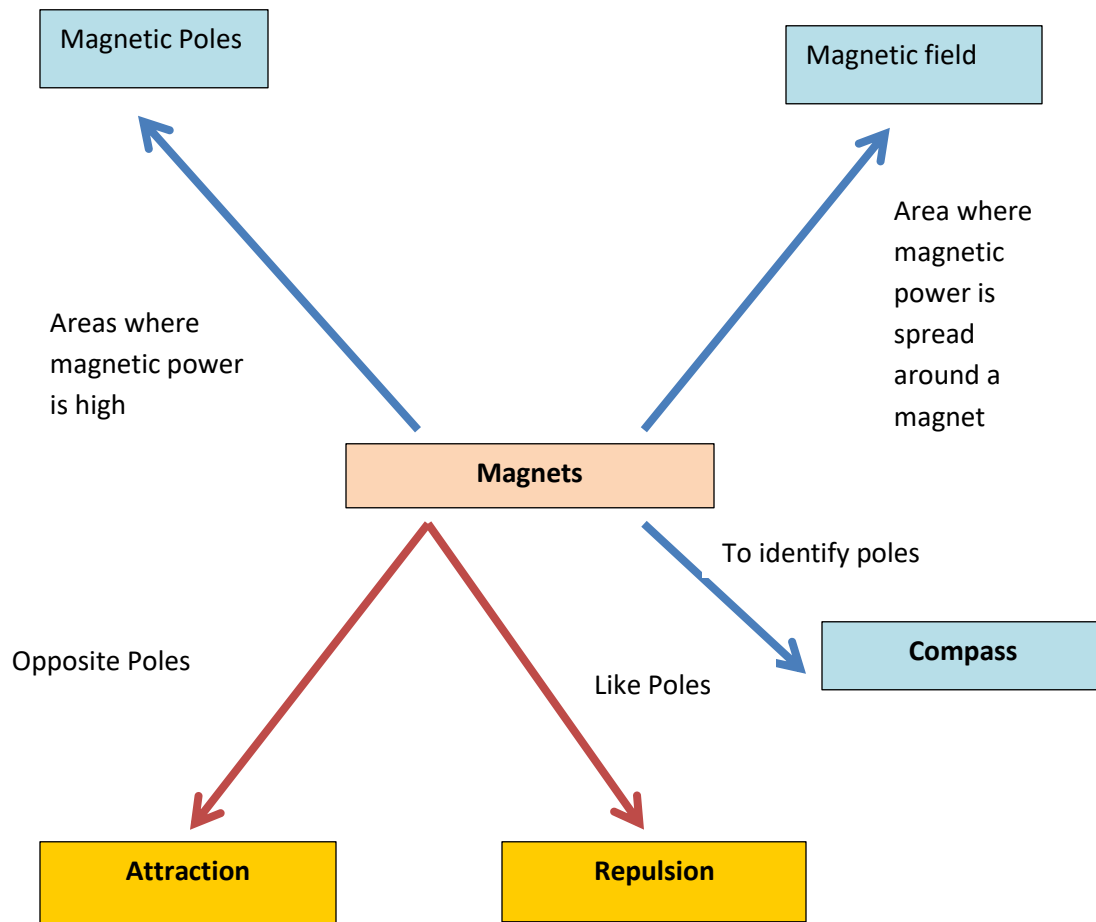


Let us measure knowledge.....

➤ Write down the correct answer.

1. Areas of a magnet where the magnetic power is high are known as
2. The area that the magnetic power is spread around a magnet is called the
..... of that magnet.
3. A magnet has two magnetic poles namely and
.....
4. A can be used for identifying magnetic poles of a magnet.
5. Like poles of magnetseach other while the opposite poles of them
..... each other.

Summary



Translated By :

Mrs. J.A.S. Yapa.
President's College
Galle.