

CHAPTER 4

MINDFUL EATING: A PATH TO A HEALTHY BODY

VEDA
ACADEMY

CLASS 6TH

NCERT EXERCISE AND SOLUTIONS - SCIENCE



P1



P2

Q. 1. Fill in the blanks

- Unlike poles of two magnets each other, whereas like poles _____ each other.
- The materials that are attracted towards a magnet are called
- The needle of a magnetic compass rests along the direction.
- A magnet always has poles.

ANSWER:-

- Unlike poles of two magnets **attract** each other, whereas like poles **repel** each other.
- The materials that are attracted towards a magnet are called **magnetic materials**.
- The needle of a magnetic compass rests along the **north-south** direction.
- A magnet always has **two** poles.

Q. 2. State whether the following statements are True (T) or False (F).

- A magnet can be broken into pieces to obtain a single pole. []
- Similar poles of a magnet repel each other. []
- Iron filings mostly stick in the middle of a bar magnet when it is brought near them. []
- A freely suspended bar magnet always aligns with the north-south direction. []

ANSWER:-

- A magnet can be broken into pieces to obtain a single pole. [F]
- Similar poles of a magnet repel each other. [T]
- Iron filings mostly stick in the middle of a bar magnet when it is brought near them. [F]
- A freely suspended bar magnet always aligns with the north-south direction. [T].

Q. 3. Column I shows different positions in which one pole of a magnet is placed near that of the other. Column II indicates the resulting interaction between them for different situations. Fill in the blanks.

Column I	Column II
N-N	
N-S	Attraction
S-N	
S-S	Repulsion



ANSWER:

Column I	Column II
N-N	Repulsion
N-S	Attraction
S-N	Attraction
S-S	Repulsion

Q. 4. Atharv performed an experiment in which he took a bar magnet and rolled it over a heap of steel U-clips (Fig).



	Position A	Position B	Position C
(i)	10	2	10
(ii)	10	10	2
(iii)	2	10	10
(iv)	10	10	10

According to you, which of the options given in table is likely to be his observation?

ANSWER:-

Atharv's Experiment with a Bar Magnet

In the experiment, the **magnetic force is strongest at the poles** (positions A and C) and **weakest in the middle** (position B).

- **Position A (North Pole):** Strong attraction → **10 U-clips**
- **Position B (Middle):** Weak attraction → **2 U-clips**
- **Position C (South Pole):** Strong attraction → **10 U-clips**

Thus, **Observation: (10, 2, 10)** is the correct result.

Q. 5. Reshma bought three identical metal bars from the market. Out of these bars, two were magnets and one was just a piece of iron. How will she identify which two amongst the three could be magnets (without using any other material)?

ANSWER:-

How Reshma Can Identify the Magnets

Test each bar by bringing it close to the other two one by one.

Observe the interactions:

- Magnets will attract the iron bar. Magnets may repel or attract each other depending on their poles.

Key identification:

- If a bar repels one and attracts another, it is a magnet (since only magnets repel each other).
- The bar that only attracts but never repels is the iron piece.



Q. 6. You are given a magnet which does not have the poles marked. How can you find its poles with the help of another magnet which has its poles marked?

ANSWER:-

How to Find the Poles of an Unmarked Magnet

1. Take a marked magnet (with known North and South poles).
2. Bring one end of the marked magnet close to one end of the unmarked magnet.
3. Observe the interaction:
 - If they attract, the unmarked magnet's end is the opposite pole (e.g., if the marked North pole attracts, then the unmarked end is South).
 - If they repel, the unmarked magnet's end is the same pole as the marked magnet's end.

Q. 7. A bar magnet has no markings to indicate its poles. How would you find out near which end its North pole is located without using another magnet?

ANSWER:-

Finding Magnet Poles

- **Suspend the magnet freely with a string.**
- The end pointing **north** is the **North pole**, and the opposite end is the **South pole**.

Q. 8. If the earth is itself a magnet, can you guess the poles of earth's magnet by looking at the direction of the magnetic compass?

ANSWER:-

Guessing Earth's Magnetic Poles

- A **compass needle** points toward the **geographic North Pole**.
- This means Earth's **magnetic South pole** is near the **geographic North Pole**.

Q. 9. While a mechanic was repairing a gadget using a screw driver, the steel screws kept falling down. Suggest a way to solve the problem of the mechanic on the basis of what you have learnt in this chapter.

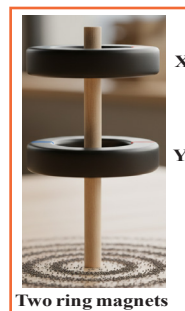
ANSWER:-

Magnetizing a Screwdriver

- **Stroke one pole of a magnet** along the screwdriver **in one direction** multiple times.
- This will magnetize the screwdriver, helping it **attract and hold steel screws**.



Q. 10. Two ring magnets X and Y are arranged as shown in Fig. It is observed that the magnet does not move down further. What could be the possible reason? Suggest a way to bring the magnet X in contact with magnet Y, without pushing either of the magnets.



ANSWER:-

Explaining Magnet X's Position

Magnet X does not move down because of **magnetic repulsion**—like poles (both North or both South) of magnets **X and Y** are facing each other.

To make X touch Y **without pushing**, follow these steps:

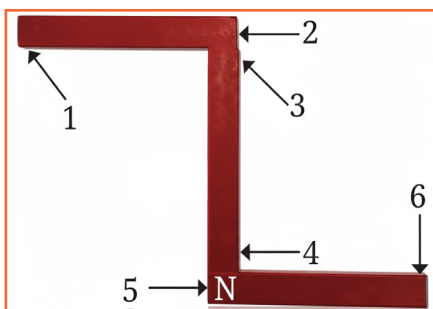
Remove magnet X from the rod.

Flip magnet X to reverse its poles.

Place magnet X back onto the rod.

Now, **opposite poles** will face each other, creating **attraction**, allowing X to move down and touch Y.

Q. 11. Three magnets are arranged on a table in the form of the shape shown in Figure. What is the polarity, N or S, at the ends 1,2,3,4 and 6 of the magnets? Polarity of one end (5) is given for you.



ANSWER:-

Determining the Polarities of the Magnet Ends

Given: End 5 is North (N).

Opposite ends of a magnet always have opposite poles, so End 6 is South (S).

Magnetic polarity follows North to South inside a magnet, meaning:

End 4 (connected to 5) must be South (S).

End 3 (opposite to 4) will be North (N).

End 2 (connected to 3) will be South (S).

End 1 (opposite to 2) will be North (N).

Final Polarities:

- End 1: North (N)
- End 2: South (S)
- End 3: North (N)
- End 4: South (S)
- End 5: North (N) (Given)
- End 6: South (S)

