6th Std - Science - Term - 3
Unit - 1 - Magnetism

TextBook Back Exercise - Answer in detail and Questions based on Higher Order Thinking Skills.
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1. Answer in detail

1. You are provided with an iron needle. How will you magnetize it?

Answer: We can make our magnet with the help of a bar magnet.

1. Place a rectangular piece of iron needle or a nail on the table.
2. Place one end (pole) of a bar magnet near one edge of the iron needle or a nail.
3. Till you reach the other end, move the bar magnet along the length of the iron needle or a nail.
4. Now, bring the pole to the starting point of the iron needle or a nail and move it in the same direction again.
5. Note that the pole of the magnet and its direction should not change.
6. Repeat this process several times (around 30 to 40 times).
7. Now, check whether it has become a magnet by placing some iron filings near the piece of an iron needle or a nail.
8. If not, continue the process again until it gets magnetized.

By this method of magnetization, we can convert an iron needle into a magnet.

2. How does the electromagnetic train work?

Answer: When an electric current flows through an iron piece wounded by a coil, it behaves like a magnet. This phenomenon is known as electromagnetism.

A type of magnet that produces a magnetic field when an electric current flows through it is known as an electromagnet.

Electromagnetic train: A good application of an electromagnet is an electromagnetic train. This train works on the principle of **magnetic levitation**. Hence, it is also known as a **suspension train** or a **flying train**. This train does not use diesel or petrol. The magnetic attraction and repulsion properties are used to run these super-fast trains.

2. Questions based on Higher Order Thinking Skills

1. You are provided with iron filings and a bar magnet without labelling the poles of the magnet. Using this…

a. How will you identify the poles of the magnet?

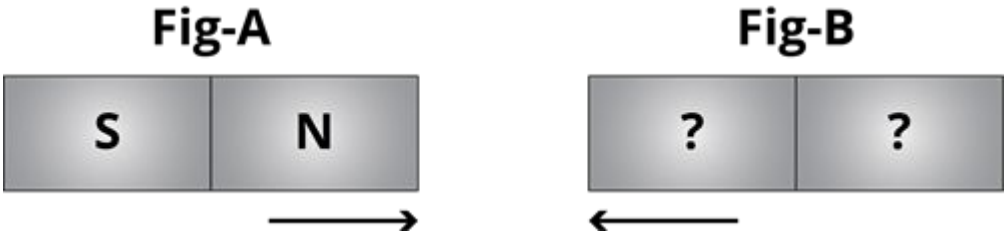
Answer: All magnets will have **two poles**, **north (N)** and **south (S)** poles. The north pole of the magnet is the end of the magnet that points towards the north. The south pole of the magnet is the end that points towards the south.

b. Which part of the bar magnet attracts more iron filings? Why?

Answer: The magnetic force is **maximum at the poles** and **minimum at the centre** of a bar magnet. This applies not only to a bar magnet but also to all kinds of magnets.

For example, if a horseshoe magnet or U-shaped magnet is kept near the iron filings, it is observed that more iron filings stick to the poles compared to the centre of the magnet.

2. Two bar magnets are given in the figure A and B. By the property of attraction, identify the North pole and the South pole in the bar magnet (B).



Answer: Repulsion occurs when **like poles**(N-N or S-S) of the magnets are kept closer to each other. **Attraction** occurs when **unlike poles** (N-S or S-N) of the magnets are kept closer to each other. Like poles repel whereas unlike poles attract each other.

3.Take a glass of water with a few pins inside. How will you take out the pins without dipping your hands into water?

Answer: If a strong bar magnet is kept above the glass of water, all the pins inside the water comes up and attracts the magnet.