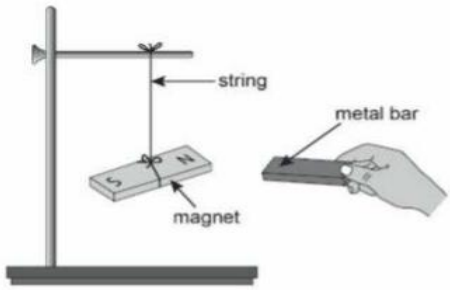
INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VI	**DEPARTMENT: SCIENCE 2026-2027**	**DATE: 07-05-2026**
WORKSHEET NO: 3 WITH ANSWERS	**TOPIC: EXPLORING MAGNETS**	**NOTE: A4 FILE FORMAT**
CLASS & SEC:	**NAME OF THE STUDENT:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS:

1. Carefully observe the activity performed by Sudhir, as shown in the picture.



	bar 1	bar 2	bar 3	bar 4
Does the magnet move towards the bar?	no	yes	yes	no

What does Sudhir's activity show?

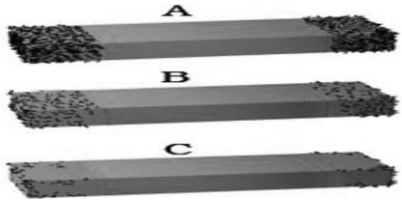
a. Bar 1 is made of iron
b. Bar 2 is made of nickel
c. Bar 3 is made of silver
d. Bar 4 is made of cobalt

2. A mixture contains sand and iron dust. How can the iron dust be separated from the sand?

a. Blow air over the mixture.
b. Sieve the mixture using a strainer
c. Pour water into the mixture and then filter it
d. Spread the mixture and run a magnet all over it.

3. Three magnets, A, B and C, were dipped one by one into a heap of iron filings. Based on the observation, the strengths of these magnets are:

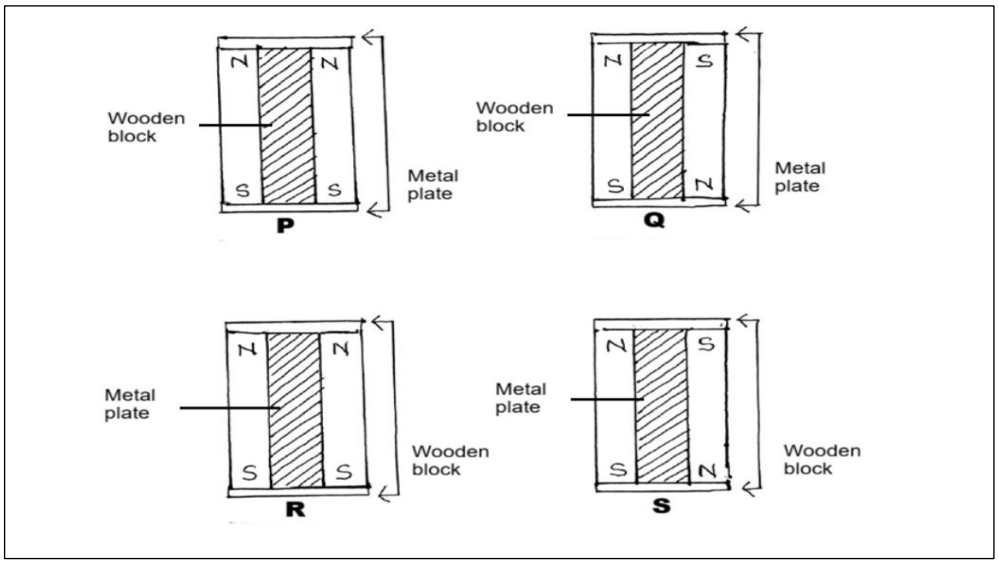
a. A > B > C
b. A < B < C
c. A = B = C
d. A < B > C



4. Which shape of magnet is commonly used in a magnetic compass?

a. Bar magnet
b. Ring magnet
c. Horseshoe magnet
d. Needle-shaped magnet

5. The figures (P), (Q), (R) and (S) show different ways to store two bar magnets. Which one is the correct arrangement?



a.P
b.R
c.Q
d.S

6. Which of the following items is attracted to a magnet?

a. Plastic comb
b. Iron clip
c. Paper notebook
d. Silver cup

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (A), (B), (C), and (D) as given below

(A) Both A and R are true, and R is the correct explanation of the assertion.

(B) Both A and R are true, but R is not the correct explanation of the assertion.

(C) A is true, but R is false.

(D) A is false, but R is true

7. **Assertion (A):** Heat can destroy the magnetic properties of a magnet.
Reason (R): There is a maximum attraction in the middle of a bar magnet.

8. **Assertion (A):** Like poles of two magnets repel each other.
Reason (R): Similar magnetic poles exert forces that push them apart.

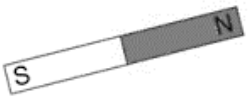
9. **Assertion (A):** A Ring-shaped magnet does not have a north and south pole.
Reason (R): Magnetite is a natural magnet.

II. VERY SHORT QUESTIONS (2M):

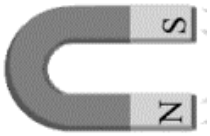
1. a. You are provided with two identical metal bars, one of which is a magnet. How would you identify the magnet?
[Hint- Take some iron filings and move the iron bars over the iron filings. If iron filings are attracted very strongly to poles, then it is a magnet, and if they are not attracted, then it is simply an iron bar.]

b. Draw neat and labelled diagrams of a bar magnet and a U-shaped magnet and mark their poles.

[Hint:



Bar magnet



U- shaped magnet

2. a. Define a magnet.
[Hint: Any material that has the property of attracting certain materials, such as iron, cobalt and nickel are called a magnet.]

b. Write three properties of a magnet.
[Hint: i) Attractive Property: A magnet attracts materials like iron, nickel, and cobalt.
ii) Directive Property: When freely suspended, a magnet aligns itself with the north-south direction.
iii) Law of poles: When two magnets are brought close to each other, like poles (north-north or south-south), repel, while unlike poles (north-south) attract each other.

3. Shyam is a carpenter. While working, a few iron nails and screws got mixed with the wooden shavings. How can you help him get the nails and screws back from the scrap without wasting his time searching with his hands?
[Hint- With the help of a magnet, he can get back all the iron nails and screws and can separate them from the wooden shavings. Since nails and screws are magnetic, they will stick to the magnet, while the non-magnetic wooden shavings will remain behind.]

4. a. What is a lodestone?

[Hint: Lodestone is the first natural magnet discovered by humans and was used to make early compasses because it always points towards the north–south direction.]

b. Why should magnets be kept away from mobiles, computers and compact disks (CDs)?

[Hint: Electrical appliances such as televisions, mobiles, CDs, and computers have magnetic storage devices inside them. When we bring external magnets near these appliances, the external magnets will interfere with the magnetic components of the appliances and may damage them.]

5. a. Classify the following as magnetic and nonmagnetic materials:
Iron, plastic, rubber, glass, mirror, cobalt

[Hint: Magnetic material-iron, cobalt
Non-magnetic material: plastic, rubber, glass, mirror]

b. What is meant by the poles of a magnet?

[Hint: Poles are the regions at the ends of a magnet where the magnetic attraction is the strongest.]

6. Differentiate natural magnets and artificial magnets

[Hint: Natural magnets are those that occur in nature and have the property of attracting iron, cobalt, and nickel. Example: Magnetite
Magnets made by humans using magnetic substances are called artificial magnets. They are made in different shapes. Examples: Bar magnets, U-shaped magnets, and ring magnets.]

7. Give reason: Repulsion is the sure test for magnetism

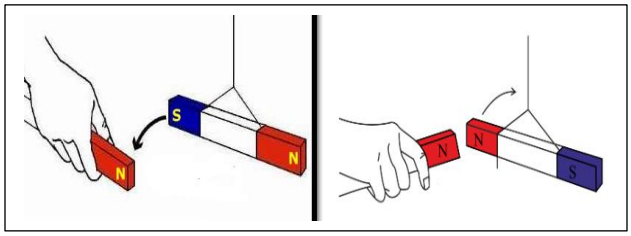
[Hint: Attraction alone is not a definitive test for magnetism. A magnetic material (like iron) is attracted to both poles of a magnet, whether or not it is itself a magnet. Repulsion, on the other hand, occurs only between two magnets when their like poles (north-north or south-south) face each other. If an object repels one pole of a known magnet, it confirms that the object itself is a magnet. Non-magnetic materials or magnetically induced materials cannot produce this effect. Thus, repulsion is the most reliable way to identify if an object is a magnet.

III. SHORT ANSWER TYPE QUESTIONS: (3M)

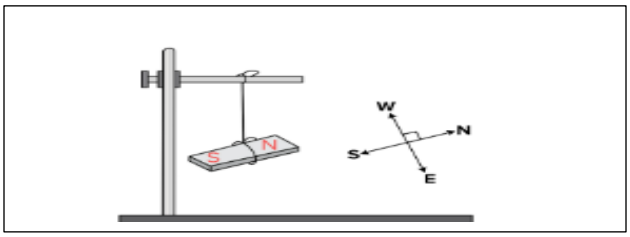
1. a. It was observed that a magnet attracts a pencil sharpener, although its body is made of plastic. Name a material that might have been used to make some part of it.

[Hint: The blade of a pencil sharpener is made of iron, which is a magnetic material. Due to this, a pencil sharpener gets attracted towards the poles of a magnet.]

b. Identify the properties of the magnet shown in the following figures:



A



B

[Hint: A: Like Poles repel, Unlike Poles attract
B-When freely suspended, a magnet aligns itself with the north-south direction.]

2. a. What will happen if a magnet is brought near a magnetic compass?

[Hint: When a magnet is brought near a compass, then the magnet will attract or repel the magnetic needle of the compass, due to which the compass needle will be disturbed from its usual north-south direction. The compass needle will point in another direction.]

b. How can you make a simple compass at home?

[Hint: To make a simple compass at home, you can magnetise a needle and float it on a piece of cork in a bowl of water. The needle will align itself with the north-south direction]

3.a. What is the correct way of storing bar magnets?

[Hint: Two-bar magnets should be placed inside a wooden box so that:
a) They should be stored in pairs with opposite poles facing each other.
b) A piece of wood must separate them, while two pieces of soft iron should be placed across their ends.]

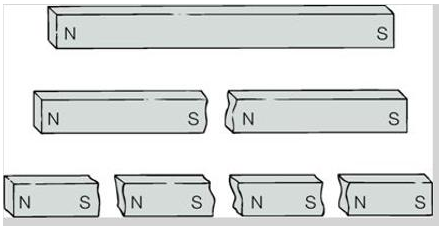
b. What should you avoid to keep magnets safe?

[Hint: To keep magnets safe, we should avoid dropping them, heating them, and hammering them. Avoid keeping magnets near mobile phones or remote controls. Avoid storing magnets improperly.]

4. How can magnets be used to separate junk from junkyards?

[Hint: Magnets attract materials like iron, cobalt and nickel. In a junkyard, objects made of such magnetic material can be separated by causing them to be attracted to a strong magnet. Therefore, a crane with a strong magnet can be used to separate magnetic materials from the junk.]

5. a. What happens to the poles of a magnet when we break a magnet into two pieces?



[Hint: The two poles of a magnet cannot exist independently. If we cut or break a magnet into two, we cannot isolate the North Pole and South Pole. We could get two pieces, each having a North pole and a South pole. Therefore, the two poles of a magnet are inseparable.]

b. When a U-shaped magnet is dipped in iron filings, no iron filings get attached to the bend portion. Why is it so?

[Hint: Poles of the magnet have maximum magnetic properties]

6. a. Suppose we place a piece of wood between the compass needle and the magnet. Will this affect the deflection of the compass needle?

[Hint: No, placing a piece of wood between the compass needle and the magnet will not affect the deflection of the compass needle. The magnetic force can pass through non-magnetic materials like wood without being blocked or weakened. As long as the magnet is close enough, the compass needle will still deflect in response to the magnetic field, even with the wood in between.]

b. What do you mean by a magnetic field?

[Hint: The region around the magnet where its magnetic influence can be felt is called the magnetic field of the magnet.]

IV. LONG ANSWER TYPE QUESTIONS. (5M):

1. a) How does a magnetic compass work? **(WBQ)**

[Hint: A compass is a device that indicates direction. It is a small glass box with a magnetic needle placed on a dial. The magnetised needle is pivoted and can rotate freely. Usually, different colours are used to point the ends of the needle to identify the north and the south poles. The dial has directions marked on it. When the compass is kept at the position of rest, the needle points towards the north and south directions. This property is used in navigating directions.]

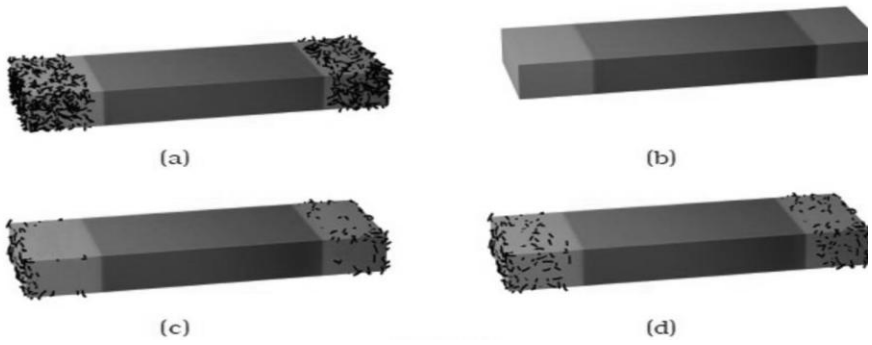
b. A magnetic compass is placed just beside a bar magnet. Will the compass now show directions correctly? Explain your answer.

[Hint: No, the compass will not work properly due to the interference of the magnetic field of the bar magnet]

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS:

1. Four identical iron bars were dipped in a heap of iron filings one by one. The figure

shows the amount of iron filings sticking to each of them.



i. Which of the iron bars is most likely to be the strongest magnet?

[Hint: Iron bar (a) is likely to be the strongest magnet since more iron filings have stuck to the magnet than any other bars.]

ii. Which of the iron bars is not a magnet? Justify your answer.

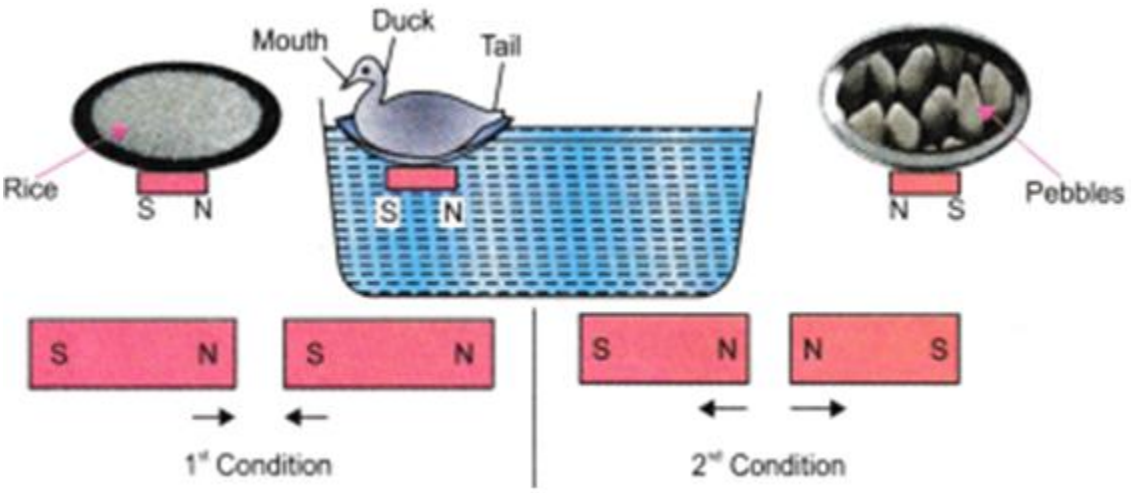
[Hint: Iron bar (b) is not a magnet since none of the iron filings sticks to the magnet.]

iii. If the iron bar b is rubbed with a permanent magnet. Can it attract iron filings?

[Hint: Yes, when an iron bar is rubbed with a permanent magnet, then the iron bar will become a magnet.]

2. Bhawana witnessed an interesting game at the fair. A duck was floating in a tub. When a plate containing some grains of rice was brought close to the duck, the duck moved towards the plate. But when a plate containing some pebbles was brought close to the duck, it moved away from the plate. Explain how this could have been possible.

[Hint: This game is based on the plate containing rice, which may have a magnet attached to its bottom. The magnet is fitted in such a way that its north pole points towards rice grains, while the south pole indicates pebbles. A magnet (bar magnet) may also be fitted in the bottom of the duck, where the south pole points towards the mouth and the north pole towards the tail of the duck. When the rice portion of the plate is brought closer to the duck, the duck moves towards the rice grains because unlike poles of two magnets attract each other. In the second situation, the same (like) poles repel each other. So the duck moves away.]



OBJECTIVE-TYPE QUESTIONS: ANSWERS

1.b. Bar 2 is made of nickel
2.d. Spread the mixture and run a magnet all over it.
3. a. A > B > C
4.d. Needle-shaped magnet
5.c.Q
6.b. Iron clip
7. (C) A is true, but R is false.
8. (A)Both A and R are true, and R is the correct explanation of the assertion.
9. (D)A is false, but R is true

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